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USE OF INJECTED IODIZED OIL IN ROENTGEN-RAY DIAGNOSIS

OF LARYNGEAL, TRACHEAL AND BRONCHO-PULMONARY CONDITIONS *

SAMUEL IGLAUER, M.D.

CINCINNATI

The introduction of a contrast substance into the bronchial tree as an aid to roentgenographic diagnosis was first practiced by Jackson.[1] For the purpose of lung mapping he employed dry bismuth subcarbonate, which was insufflated through a bronchoscope.

In 1918, Stewart and the late Dr. Lynah[2] demonstrated excellent roentgenograms of pulmonary abscesses and bronchiectatic cavities which had been filled with an emulsion of bismuth in olive oil.

The endobronchial injection of lipiodol, an iodized vegetable oil containing 40 per cent of iodine by weight, was first practiced by Sicard and Forestier[3] after they had successfully employed it in the spinal canal and other body cavities. The oil and iodine are firmly bound and, owing to its marked radiopacity and nonirritating qualities, lipiodol has proved to be an excellent medium for bronchography.

Forestier and Leroux,[4] Sergent and Cottenot[5] and others repeated the experiments with gratifying results. It was soon discovered that, since the oil gravitated into the most dependent portion of the lung, the course of its flow could be directed by changing the position of the patient.

Delille,[6] who confined his work to children, detected a series of cases of bronchiectasis in patients who had been confined in a sanatorium under the mistaken diagnosis of tuberculosis.

The French school, in general, employs two methods of introducing the oil. The first consists in anesthetizing the larynx (and trachea) and then injecting lipiodol with a laryngeal syringe, provided with a long cannula, introduced above or below the glottis. In the second method a small curved trocar and cannula is thrust through the cricothyroid membrane into the trachea, and a diluted procaine solution is then injected through the cannula to check the cough reflex, after which the iodized oil is also introduced through the cannula.

In 1925, Clerf,[7] as well as Ballon,[8] injected the oil through a long cannula inserted through a bronchoscope.

Recently, Beck and Sgalitzer[9] of Vienna employed a retention catheter introduced through the larynx, and directed the flow of the oil by placing the patient before the fluoroscope while the oil was being injected.

Haslinger[10] employs a specially devised bronchus tube, which is guided into the bronchus under fluoroscopic control.

Nather[11] describes an original method. After cocainization of the larynx and hypopharynx, the patient is instructed to swallow the oil. According to Nather, in a majority of instances the fluid will be swallowed the wrong way; i. e., into the trachea.

The German preparation of iodized oil is marketed under the name of "iodipin" (40 per cent), while the Danish product is designated "iodumbrin"[12] and is said to be more opaque than lipiodol. I have used both iodipin and lipiodol and can note no marked difference either in their local action or in their opacity. In order to avoid any possible chance of iodism, Dyroff[13] has just reported the use of a new preparation, "contrastol," in which bromine has been substituted for the iodine radical. Unlike iodized oils, "contrastol" is readily sterilized by boiling.

VARIOUS INJECTION METHODS

The introduction of iodized oil is a laryngologic problem. The use of the laryngeal syringe requires

* Chiefly from the laryngologic and roentgenologic departments of the Cincinnati General Hospital.

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Jackson, Chevalier: Tracheo-Bronchoscopy in Diseases of the Trachea and Bronchi (Tracheobronchoscopy, Esophagoscopy and Gastroscopy, 1907, p. 69); The Bronchial Tree: Its Study by Insufflation of Opaque Substances in the Living, Am. J. Roentgenol. **5**: 454-455 (Oct.) 1918.

2. Lynah, H., and Stewart, W.: Roentgenographic Studies of Bronchiectasis and Lung Abscess After Direct Injection of Bismuth Mixture Through the Bronchoscope, Am. J. Roentgenol. **8**: 49-59 (Feb.) 1921.

3. Sicard, H., and Forestier, J.: Methode générale d'exploration radiologique par l'huile iodée (lipiodol), Bull. et mém. soc. méd. d. Hôp. de Paris **46**: 463 (March 17) 1922; L'huile iodée en clinique: applications thérapeutiques et diagnostiques, ibid. **47**: 309 (Feb. 23) 1923.

4. Forestier, J., and Leroux, L.: Etude expérimentelle radiologique des injections intratracheales par l'huile iodée injections lobaire, Bull. et mém. Soc. méd. d. Hôp. de Paris **47**: 299 (Jan. 23) 1923.

5. Sergent, E., and Cottenot, P.: L'étude radiologique l'arbre tracheo-bronchique au moyen des injections intratracheales de lipiodol, Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 693 (May 11) 1923.

6. Armand-Delille, P. F.; Duhamel, G., and Marty, P.: Le diagnostique de dilatation bronchique chez enfants au moyen du lipiodol, Presse méd. **32**: 421 (May 14) 1924. Armand-Delille, P. F.: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 1619 (Dec. 30) 1923. Armand-Delille, P. F., and Gelston, C. F.: Diagnosis of Dilatation of Bronchi in Children by Means of Injection of Iodinized Oil, Am. J. Dis. Child. **28**: 527 (Nov.) 1924.

7. Clerf, L. H.: Pneumonography, Surg., Gynec. & Obst. **41**: 722-727 (Dec.) 1925.

8. Ballon, D. H.: The Injection of Lipiodol as an Aid in the X-Ray Diagnosis of Bronchopulmonary Lesions, Including Tuberculosis, Canad. M. A. J. **15**: 995-999 (Oct.) 1925.

9. Beck, O., and Sgalitzer, M.: Zur Bronchographie mittels Larynx-Katheters, Ztschr. f. Hals-, Nasen- u. Ohrenh. **14**: 8 (Jan. 26) 1926; Ztschr. f. Chir. **52**: 1537-1541 (July 11) 1925.

10. Haslinger, F.: Discussion, München. med. Wchnschr., April 9, 1925, p. 422.

11. Nather, K.: Zur Technik der Bronchographie (Verschluck Methode), Deutsche Ztschr. f. Chir. **188**: 1534-1537 (July 11) 1925.

12. Moeller, P. F., and von Magnus, R.: Investigation of Bronchial Affections by Means of Iodine Preparations (Iodumbrin and Lipiodol), Acta med. Scandinav. **63**: 174.

13. Dyroff, R.: "Contrastol," ein neuer Kontrast Mittel fur die Darstellung Engkalibrigen Hohlraume, Deutsche med. Wchnschr. **52**: 397 (March 5) 1926.

considerable training and is rather difficult if the patient's body is inclined at an angle in order to inject some particular region of the lung.

Fig. 1.—Double barreled intubation cannula, with large channel for breathing and smaller channel for injecting oil; *I I'*, air channel; *A A'*, oil cannula; *O*, outlet for oil cannula; *R*, rubber tubing; *S*, syringe attachment; arrows indicate direction of oil flow.

Puncture through the cricothyroid membrane gives a direct approach, but the trachea may be missed and the oil may be injected into the peritracheal tissues. I have witnessed two cases in which this accident occurred in expert hands. The occurrence of interstitial emphysema and slight hemorrhage has also been reported.

The bronchosopic method is undoubtedly the most certain and offers the additional advantage of permitting direct inspection and removal of specimens. The bronchoscope, however, cannot be generally employed because the patient may object to its use and because of the special training required for its manipulation.

The catheter method is simple and permits of easy injection under fluoroscopic control. However, it requires considerable cooperation on the part of the patient, who must hold the catheter fixed between his teeth. Its use is obviously not very practicable in children.

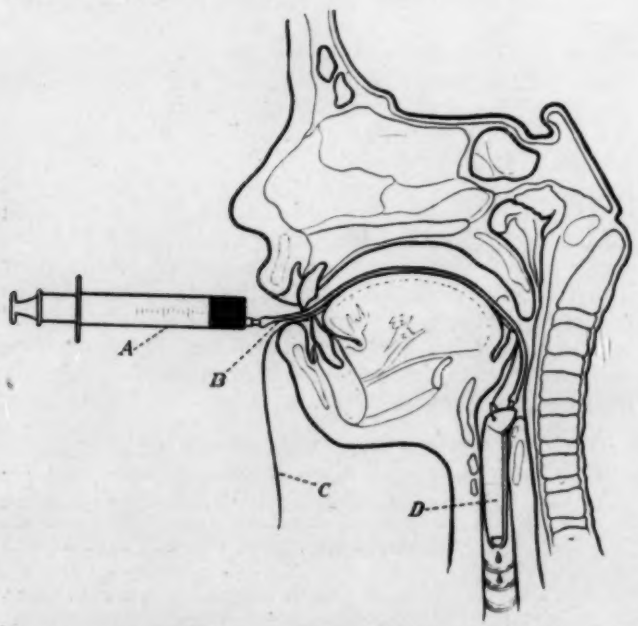

Fig. 2.—Intubation cannula in situ: *A*, syringe containing oil; *B*, rubber tubing; *C*, extracting string; *D*, intubation cannula.

The swallowing method is uncertain and involves the problem of oral sepsis.

My own work has been carried on chiefly with the bronchoscope and with the use of a special intubation tube which I have devised for this purpose.

Intubation Method.—Intubation Cannula: The instrument consists of a shortened metal O'Dwyer tube with a longitudinal groove cut in the back wall into which a small bore secondary cannula is soldered. The accessory cannula (designed to convey the oil) is somewhat longer than the O'Dwyer tube and terminates above in a nipple, over which a long piece of rubber tubing is slipped. Below, the secondary cannula extends in a semicircular prolongation beyond the O'Dwyer tube, to insure the entrance of the oil into the trachea (fig. 1). The semicircular extension facilitates the introduction of the intubation cannula. When inserted into the larynx, the double barreled arrangement provides one channel for the injection of the oil while the main channel remains unobstructed for breathing purposes.

Technic: In order to obtund the cough reflex, a preliminary dose of codeine or morphine is administered. In the adult, the larynx is anesthetized with a 10 to 20 per cent solution of cocaine. In young children, this

Fig. 3.—Pulmonary tuberculosis involving the right lung: Trachea slightly deflected to the right; lung injected with the patient lying on the right side; the right tracheobronchial tree is filled with the exception of the infiltrated apex, which the oil could not penetrate.

is omitted. A long piece of rubber tubing is attached to the oil cannula, and the intubation tube is threaded in the usual manner for safety and extraction. The intubation tube, carried on an obturator, is then introduced into the larynx under the guidance of the laryngoscopic mirror. In young children it is inserted by touch. Through the rubber tube which projects from the patient's mouth, a small quantity of cocaine solution (2 per cent) or procaine (3 per cent) is injected into the trachea to abolish the cough reflex.

In the roentgen-ray room, a glass syringe containing warm iodized oil is attached to the rubber tube through which the oil is slowly injected into the trachea (fig. 2). Should the patient cough, the intubation tube acts as a baffle and tends to prevent the escape of the oil into the pharynx. By varying the position of the patient, one causes the oil to gravitate into any desired portion of the lung. If the patient is placed on his side, the dependent lung may be injected throughout (fig. 3). It is often advantageous to control the direction of flow by placing the patient before the fluoroscope while the oil is being injected. Since the oil may diffuse rapidly or be expectorated with the return of the cough

reflex, the roentgenogram should be taken immediately after the injection. From 15 to 20 cc. will usually suffice for visualizing one lung. As much as 40 cc. of oil may be introduced. Both bases or one lung may be filled at one time, but it is not advisable to fill entirely both lungs at one sitting.

The intubation tube is withdrawn by traction either before or after the picture is taken.

Advantages: The advantages of the intubation method lie in its comparative simplicity and its applicability to all ages. Little cooperation is necessary on the part of the patient, who is free to move about and can be comfortably placed in any desired position. Fluoroscopic control of the injection may be readily employed, while the baffle action of the tube tends to prevent the escape of the oil from the trachea.

ROENTGENOGRAPHY

The roentgenography in connection with this paper was carried out by Drs. George Benzing and Samuel Brown. The films were taken in either the upright or the recumbent posture. The best films were obtained when the patient held his breath at the end of a deep inspiration. Stereoscopic films were made whenever possible, and lateral views were also found to be of value.

Normal.—The normal tracheobronchial tree is beautifully delineated after injection. The trachea in the midline of the body stands out clearly, and occasionally the outlines of individual rings are clearly visible. The carina and main bronchi are readily located, and the tapering arborescent structure of the bronchi give a very striking picture. The alveoli are frequently filled as far as the peripheral pleura (fig. 4).

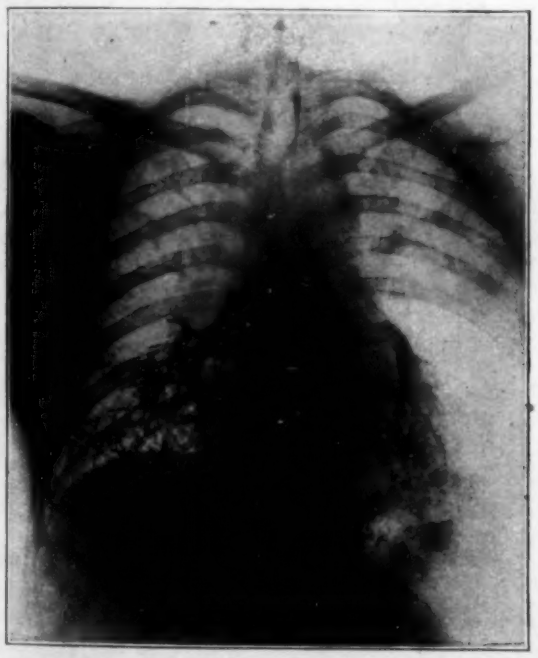

Fig. 4.—Normal tracheobronchial tree injected with iodipin, 18 cc., introduced through intubation cannula: The trachea, main bronchi, the bronchioles and some of the alveoli in the lower lobes are well delineated.

Pathologic.—Larynx: In the literature, no reference is made to roentgenography of the larynx visualized by injection. For the purpose of studying the lumen in the stenotic larynx, the oil was injected into the larynx and a profile picture was snapped while the oil was flowing through the larynx. In several cases the narrowed subglottic region was well delineated.

In tracheotomized patients, the following procedure was adopted: A finger cot was filled with a fluid contrast substance, and a string was tied to each end of the finger cot. A probe, carrying a long string, was passed through the tracheal fistula into the pharynx and

Fig. 5.—Tracheotomized patient: Finger cot filled with opaque material has been pulled into the larynx from above; the stenotic area extends from *A* to *B* above the cannula, *C;* distended portion of finger cot, *D*, is in the hypopharynx.

out of the mouth. The oral end of this string was then attached to one end of the finger cot, the tracheal cannula was reinserted, and the finger cot was pulled into the larynx. By this method the dimensions of the narrowed subglottic lumen of the larynx could readily be demonstrated in the roentgenogram (fig. 5).

Trachea and Bronchi: Distortion, obstruction or displacement of the trachea and main bronchi are delineated with much greater clearness than in ordinary roentgenograms. Occasionally a reservoir bronchus pulled up by fibrosis or adhesions may be demonstrated.

Bronchiectasis: The diagnosis of bronchiectatic cavities, which hitherto has been very difficult for both internists and roentgenologists, is greatly simplified in the injected lung. The bronchiectases stand out as club-shaped, grapelike, or fusiform swellings, along the course of the bronchial tree (figs. 6 and 7).

The following case is rather illuminating:

In 1926, an ex-soldier, claiming disability as a result of his service during the World War, was admitted to Diagnostic Center no. 1 in the Cincinnati General Hospital. His chief complaints were cough and profuse expectoration. He had been refused compensation at four Veterans' Bureau examination centers on the ground that his illness had no service connection. Bronchography after injection disclosed two large bronchiectatic cavities situated behind the heart shadow. The disease was then retraced to an attack of influenza contracted in March, 1919, and the patient was awarded back compensation from that date forward.

Lung Abscess: It is not always possible to inject a lung abscess. This may be due to the fact that the cavity is filled with secretion or has a very narrow connection with a bronchus. If the cavity can be evacuated through a bronchoscope, the oil may then be injected. The relation of the cavity to the bronchial tree should

in a large measure determine whether the case should be treated by bronchoscopy and irrigation or by surgical measures. It is apparent that a peripherally located abscess with a narrow drainage bronchus is unfavorable for endobronchial treatment.

Tuberculosis: Although some authors, fearing congestion and hemorrhage, have expressed some doubt as to the advisability of injecting tuberculous lungs, Archibald [14] and Ballon [8] undertook bronchography in a large series of such cases without noting any bad effects.

Cavities: The study of cavitation is interesting. Some difficulty may be encountered in filling apical cavities; but, on the other hand, unsuspected cavities may be disclosed. In one of our patients who had been under close clinical and roentgen-ray observation for three years, a large basal cavity with poorly defined walls was delineated for the first time after iodipin had been introduced (fig. 8).

Pneumonography.—Pneumonography gives valuable information as to the limits and thickness of the cavity walls. A poorly defined wall indicating softening makes the prognosis more unfavorable. The differential diagnosis between an infiltrated lung area and a thickened pleura or effusion may be determined by pneumonography. After artificial pneumothorax, interesting observations have been made by Geriaud and DeRegnier,[15] showing that some function still remains despite the collapsed condition of the lung.

One of our cases of pneumothorax showed that the bronchial structures as a whole were firmly compressed against the larger bronchi.

Fig. 6.—Numerous fusiform bronchiectatic cavities in the left lower lobe. Patient was injected with about 9 cc. of lipiodol in each lung.

Archibald [14] finds bronchography valuable in establishing the indications for thoracoplasty, and also employs it in the study of the progress of cases after operation.

Fistula: Moeller and von Magnus [12] injected the outlet of an empyema fistula and found that the iodumbrin had entered a bronchus, thus demonstrating the presence of a bronchopneumopleural fistula. The fistula, which had shown very little tendency to heal, closed within three weeks after the treatment.

Tumor: Injection of the lung aids in the differential diagnosis between tumor and abscess. In tumors of the pleura or lung parenchyma, the injected bronchi either terminate at the site of the tumor or seem to be pushed aside by the growing neoplasm. The value of bronchography in this condition is greatly enhanced if it is combined with bronchoscopy.

Fig. 7.—Lateral view of chest showing numerous grapelike bronchiectatic cavities in the base of the left lung behind the heart shadow, *H*. Patient was injected with about 18 cc. of lipiodol.

EFFECTS OF INJECTING THE BRONCHI

As a rule, endobronchial injection is well borne by the patients, and no disturbing after-effects are encountered.

Dyspnea. — Dyspnea during and shortly after the injection occurred in a few of our cases, and was especially marked and persistent in one patient with a collapsed lung, the oil entering the functioning lung. Severe dyspnea and cyanosis were observed in a patient with myocardial insufficiency. Ordinarily, when dyspnea occurs it is probably due to the mechanical effect of the oil combined with susceptibility to cocaine. Slow injection tends to diminish the mechanical factor.

Fever.—A slight febrile reaction frequently follows the introduction of the oil. The fever usually subsides within a day or two. In exceptional cases, it may persist for several days. Expectoration is usually increased for a few days after the introduction of the oil, after which the quantity of sputum may become normal or even subnormal.

In one of our cases of pulmonary tuberculosis, the patient expectorated some blood for the first time a few days after the injection. In two other cases which had been under clinical observation for some months, tubercle bacilli appeared for the first time after the oil had been introduced, thus establishing the diagnosis, which had been uncertain in both patients. This test may prove of value in doubtful cases, and is comparable to the diagnostic expedient with potassium iodide administered for the purpose of freeing tubercle bacilli in the sputum. Injection of the oil is contraindicated in febrile or cachectic patients and in those with cardiac decompensation.

Elimination.—A considerable portion of the injected oil is ejected by expectoration. The remainder is eliminated by absorption. According to Moeller and von Magnus, no traces of iodine could be found in the urine after a lapse of six days. In two of our cases, bronchography showed remains of the iodipin in the lung five weeks after it had been injected.

14. Archibald, E.: X-Ray Demonstration of Pulmonary Changes in Tuberculosis by Lipiodol Injection, Canad. M. A. J. **15**: 1000-1002 (Oct.) 1925.

15. Geriaud, A., and DeRegnier, L.: Studies in Pneumothorax, Rev. tuberc., series 3, **6**: 5.

SUMMARY

1. Injected iodized oil has proved to be an excellent contrast substance in roentgenography of the larynx, trachea and bronchi.

2. The oil may be introduced by several methods, including injection with the laryngeal syringe, puncture through the cricothyroid membrane, injection through a bronchoscope, insertion of a catheter into the trachea, or the "swallowing" method.

3. The insertion of a specially devised double barreled intubation tube, with a main channel for breathing and a secondary channel for the oil, provides a simple and effective method for endotracheal injection. It may be used in both children and adults (figs. 1 and 2).

4. In order to direct the flow of the oil into a particular area or region of the lung, it is frequently advantageous to inject the bronchi and change the position of the patient, under fluoroscopic control.

5. The normal tracheobronchial tree is beautifully delineated after injection.

6. In the stenotic larynx, the extent of the obstruction may be visualized by the introduction of radiopaque substances.

7. Distortion and displacement of the trachea and bronchi are clearly delineated.

8. Bronchiectasis, lung abscess, cavitation, the limit of pulmonary tumors and bronchopulmonary fistulas are plainly outlined.

9. As a rule, endobronchial injection of oil is well tolerated by the patients. Occasionally, dyspnea and some fever ensue.

10. Injection is contraindicated in febrile or cachectic patients and in those with cardiac decompensation.

ABSTRACT OF DISCUSSION

DR. I. D. BRONFIN, Sanatorium, Colo.: As internists, especially those of us who are called on to treat diseases of the lungs, we are greatly interested in this method of diagnosis. I myself have had comparatively little experience with this method, but it opens up a new and valuable method of diagnosis of certain diseases of the lungs which heretofore have caused great perplexity to internists. With regard to the method of injecting the oil, we who practice in tuberculosis sanatoriums are obliged to acquire a certain amount of skill in the use of the laryngoscope. We have not found any especial difficulty in training patients for the ordinary intratracheal method. The question is often raised as to how much injury is caused by the oil. I have not found any. The oil does not seem to cause any irritating effect on the pulmonary tissues as far as can be detected by auscultation. I used it first in a case of bronchiectasis in which the roentgen ray did not bear out the diagnosis. The iodized oil is still present in the lung, after sixteen weeks, but no râles are present. That opens up the question of the extent of injury a foreign substance causes to lung tissue. A few years ago such a study was made by Corper in which he showed that the presence of oil produced some infiltration of the pulmonary tissue. Clinically it has not been borne out, but it seems that there must be a little caution in using this oil. It will require a great deal of experimental work and investigation to determine this point. In cases of bronchiectasis we can usually make a diagnosis by the symptoms; but the presence of an abscess cavity in the lung is sometimes hard to detect, and if this oil will help to diagnose those cases it will prove a valuable method to the internist.

DR. THOMAS E. CARMODY, Denver: I have used this oil for about a year and have had a number of roentgenograms made in these cases three or four months afterward, finding a large amount of the iodized oil still in the lung. I have not used it in tuberculous cases, as Dr. Iglauer and Dr. Bronfin have, because I did not wish to pass a bronchoscope in those cases. I have used it almost entirely through the bronchoscope, although sometimes with the tracheal syringe, and I do the same thing Dr. Iglauer does with the intubation tube although not quite so easily; but in a case in which the patient is very ill with lung abscess or any wasting condition and one wishes to map out the lung, I believe that the intubation tube will help a great deal. I had one case in which I mapped out the esophagus as well as the trachea, which is important from the standpoint of stenosis or diverticula. I believe Dr. Iglauer has brought forward something which, together with the discovery of iodized oil, will help us a great deal in mapping out these cavities. The roentgen ray alone will not map out many of them, but the injection will help us to show the cavity. One case that Dr. Iglauer showed did not appear on the roentgenogram before injection; and while the roentgenologist may be very thorough and be able to interpret the plate, the iodized oil will help him and help us.

DR. SAMUEL IGLAUER, Cincinnati: Dr. Bronfin raised the question of the injury to the lung from the injection of this foreign substance. This oil has been used in France for three years, and in this country for more than a year. It has been used in Denmark and in Russia, and the consensus

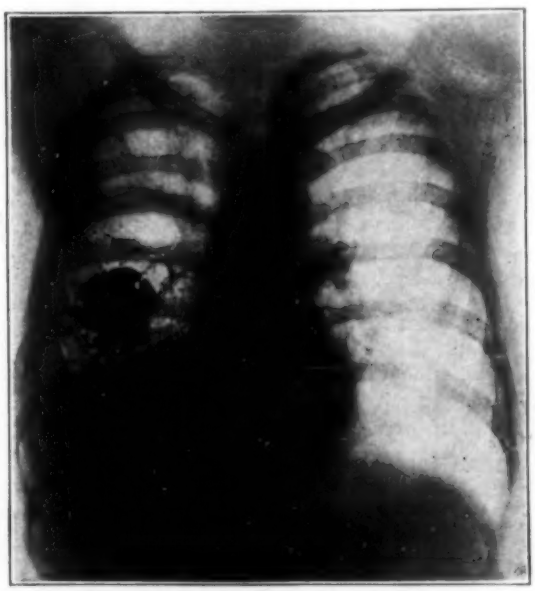

Fig. 8.—Pulmonary tuberculosis: Large cavity in right lower lobe filled with iodipin; the drainage bronchus is delineated; this patient had previously had numerous roentgenograms which had failed to show the presence of a cavity.

is that it does no harm, especially to the normal lung. In pulmonary tuberculosis there is a question as to whether it does harm, but naturally the tuberculous patient will react readily to any slight insult. Two patients that were injected had never shown tubercle bacilli until the oil was introduced, and in a few days tubercle bacilli appeared in large numbers. In these cases it was of value from a diagnostic standpoint. Some of the tuberculous patients were ill for a week, especially one man who had had a thorocoplasty. Archibald, before performing a thorocoplasty, injects the tuberculous lung with this oil, and after the operation if the case does not proceed in a normal manner he may reinject to see why there is no improvement. Dr. Bronfin said that the diagnosis of bronchiectasis is usually easy. I am told by internists and roentgenologists that it is always difficult. Dr. Carmody spoke of the retention of the oil in the lung parenchyma. It is true that in pathologic cases it may remain for several weeks, but it seems to have no irritating effect. Another point about using this oil in tuberculosis: If it is true that the iodine has some bad effect on the tuberculous lung, it can be done away with by using the new oil which has just been discovered—a contrast oil which does not contain iodine but bromine, firmly bound. As regards the introduction of lipiodol with a syringe, it is quite possible to inject the

trachea by the ordinary injection method; but if, for example, one wishes to put the patient on his right side and inject the oil, one will have to stand on one's head. If the intubation tube is inserted, one can put him in any position and he is comfortable and can breathe through the tube. Furthermore, if he happens to cough, the intubation tube acts as a baffle, and one does not have the oil ejected and swallowed as one would with a syringe. I have had no fatalities. About a week after I had made the injection, a patient died with generalized septicemia with miliary abscesses in the spleen, etc. One of the contraindications is that this oil should not be injected into a very ill patient.

PHYSIOLOGY OF SYMPATHETIC NERVOUS SYSTEM IN RELATION TO CERTAIN SURGICAL PROBLEMS*

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AND
STANLEY COBB, M.D.
BOSTON

The proposal to relieve spastic paralysis by surgical interruption of the sympathetic innervation of the muscles involved rests on the theory that a special function, designated "plastic tonus," depends on the sympathetic nerve fibers, and that abolition of this plastic tonus will relieve the pathologic condition. The theory seems to have arisen, in the first place, from the anatomic observations of Boeke,[1] which apparently establish the innervation of certain skeletal muscle fibers by sympathetic as well as by cerebrospinal nerve fibers. Subsequent investigations by various workers leave little doubt that in some, at least, of the skeletal muscles there are striated fibers innervated by sympathetic nerve fibers; but whether these fibers exist in all muscles and whether they differ histologically from the muscle fibers innervated by medullated nerve fibers are unsettled questions.

The functional significance of these fibers has been a matter of more speculation than observation. Some observers have reported a loss of tonus in skeletal muscles, following section of their sympathetic innervation.[2] A larger number of observers have failed to substantiate this finding.[3] The more recent development of the subject has involved the alleged distinction between "contractile" and "plastic" tonus. Sherrington[4] first called attention to the remarkable plasticity of the limb of a decerebrate animal. The limb shows a tendency to remain in whatever position is passively imposed on it, the muscle maintaining the requisite tension irrespective of length. Sherrington gave convincing reasons for interpreting these phenomena as the result of proprioceptive reflexes; that is, as reflexes set up by excitation of sensory receptors within the muscle substance and afferent nerve impulses arising therefrom. But Sherrington did not postulate a special neuromuscular mechanism for mediating the plastic effect, distinct from that involved in ordinary contraction of the muscle.

Langelaan[5] sought to establish two separate mechanisms and functions in the muscle: a contractile mechanism and a plastic mechanism. Hunter[6] assumed Langelaan's distinction to be well founded, and endeavored to show that the plastic element in tonus is eliminated by sympathectomy, while the contractile element is not disturbed. On the basis of Hunter's theory and the experiments in support of it, Royle[7] developed the operation of ramisection by which he asserts that he has relieved certain cases of spastic paralysis.

As to the validity of Langelaan's hypothesis of distinct plastic and contractile functions in muscle, it is pure speculation based to a considerable extent on misunderstanding of the work of previous observers.[8] Furthermore, it fails to harmonize with the known

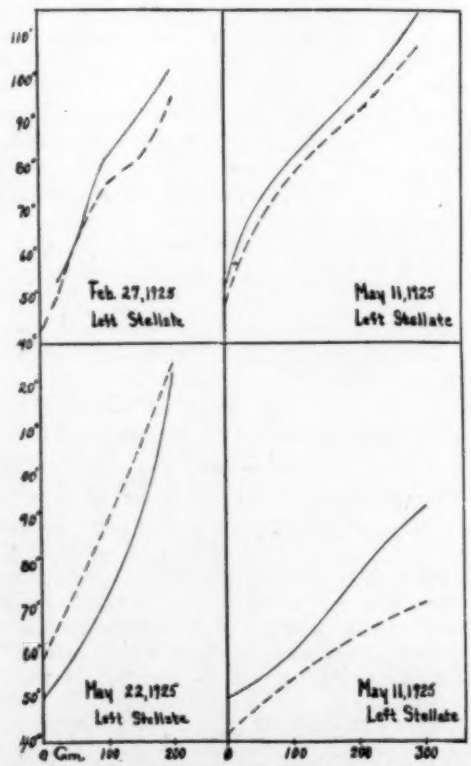

Fig. 1.—Curves correlating elbow flexion with flexing force applied in stellate experiments: Abscissas, tension applied to wrist perpendicular to ulna; ordinates, degrees of flexion; solid line, operated limb; broken line, control. February 27, three days after operation, measurements made one hour after decerebration; May 11, seventy-six days after operation, upper curves twenty minutes, lower curves three hours after decerebration; May 22, seventy-four days after operation, one and one-half hours after decerebration.

facts of nerve-muscle physiology. It is well established that when a nerve or muscle is stimulated, the resulting functional response is of an all-or-none character. It is independent both qualitatively and quantitatively of the strength or nature of the stimulus, provided this is adequate. One cannot vary the character or amount of response in a nerve impulse or the resulting muscle response by changing the character of the external stimulus any more than one can vary the speed of a rifle bullet by varying the pressure with which the trigger is pulled. Since all experiments indicate that nerve fibers and muscle fibers respond in the same manner to all stimuli, artificial or otherwise, it is difficult to see how the nerve fibers could be made to con-

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* Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Boeke, J.: Internat. Monatschr. f. Anat. u. Physiol. **28**: 377, 1911. Boeke, J., and Dusser de Barenne, J. G.: Proc. Sect. Sc. Wet. Amsterdam **21**: 1227, 1919.

2. De Boer, S.: Ztschr. f. Biol. **65**: 239, 1915. Hunter, J. I.: Surg. Gynec. Obst. **39**: 721 (Dec.) 1924. Kuntz, A., and Kerper, A. H.: Am. J. Physiol. **76**: 121, 1926.

3. Dusser de Barenne, J. G.: Folia neuro-biol. **7**: 651, 1913. Cobb, S.: Am. J. Physiol. **46**: 478 (July) 1918. Meek, W. J., and Crawford, A. S.: Am. J. Physiol. **74**: 285 (Oct.) 1925. Coman, F. D.: Bull. Johns Hopkins Hosp. **38**: 163, 1926.

4. Sherrington, C. S.: Quart. J. Exper. Physiol. **2**: 109, 1909.

5. Langelaan, J. W.: Brain **38**: 235, 1915.

6. Hunter (footnote 2): Am. J. M. Sc. **170**: 469 (Oct.) 1925.

7. Royle, N. D.: Surg. Gynec. Obst. **39**: 701 (Dec.) 1924.

8. Cobb, S.: Physiol. Rev. **5**: 518 (Oct.) 1925.

duct the alleged plastic influence whereby the length of the muscle is caused to remain unchanged, without any release of contractile effort such as results from ordinary excitation. All the known facts of plastic tonus can be explained in terms of the well known, all-or-none type of response in the individual nerve and muscle fibers, as has been shown by the work of Liddell and Sherrington [9] and of Fulton.[10] A serious objection to the theory of the influence of the sympathetic nerves on muscle tonus is the absence of any contractile response to artificial stimulation of these nerve fibers; and supplementing this is the absence of the effect of drug action that one would expect in tissues innervated by the sympathetic fibers.[11] Finally, there is the preponderance of evidence from previous investigations of sympathectomy, tending to show no consistent change in tonus at all resulting from this procedure. The positive results of Hunter were too few to justify a final conclusion in a problem so beset with possible sources of error.

Although the theory of a plastic function as distinct from contractile function is untenable, it is nevertheless possible that sympathectomy might have some effect, if there are indeed skeletal muscle fibers innervated by sympathetic nerve fibers. If these particular fibers participate in the postural reflex known as decerebrate rigidity, we should expect a slight decrease in rigidity after they are cut. If the contraction of these particular fibers is more sluggish than that of the fibers innervated by the cerebrospinal nerves, we should expect the contraction and relaxation of the muscle as a whole, after their elimination, to be somewhat more brisk. In other words, the muscular contraction would resemble less than ever the slow, plastic type of contraction found in smooth muscle. If this were actually observed, there might be some basis for the assertion that there is a decrease in plasticity following sympathectomy or ramisection.

Hunter maintained that the effects of sympathectomy became more marked for several weeks after the operation was performed. If these effects were due to the mere withdrawal of efferent sympathetic impulses from the muscles there could be no such progressive increase in the effect, for impulses cease to flow from the cut surface of a nerve within a few seconds after the section is made. There might, however, be a delayed effect due to metabolic and physical changes in the muscle.

With these facts in mind, experiments were performed on a series of seventeen cats by Forbes, Cannon, O'Connor, Hopkins and Miller.[12] In eleven of these the fore limb on one side was deprived of its sympathetic innervation by removal of the stellate ganglion; in the other six, the abdominal sympathetic chain of one side was removed. In three of the animals they performed decerebration first, and then, after observing whether or not decerebrate rigidity was symmetrical on the two sides, performed the sympathetic operation and observed the immediate effect of it, if any. In all the rest of the series the sympathetic operation was performed first aseptically, and after a period of from three to eighty days the animal was decerebrated, and rigidity on the two sides quantitatively studied by means of spring balances to measure the tension of muscle, and protractors to measure the angles of the elbow or ankle joints.

These experiments showed, in the first place, that if precautions are taken to avoid confusion due to the influence of asymmetrical posture (shown by Magnus and de Kleijn to modify decerebrate rigidity), tonus will usually be approximately symmetrical on the two sides in a decerebrate animal, prior to sympathectomy, and a fairly satisfactory basis can thus be found for testing the effect of the operation. But uncontrolled changes in decerebrate rigidity occasionally occur and render the basis of comparison unreliable. A large number of consistent results would be needed to warrant conclusions.

As to the effect of sympathectomy, the results of these experiments were by no means uniform. Comparison of the operated limb with its mate usually showed almost perfect symmetry; that is, no appreciable difference. Sometimes there was less rigidity on the operated side, sometimes more. Averaging the measurements of the entire series showed slightly less

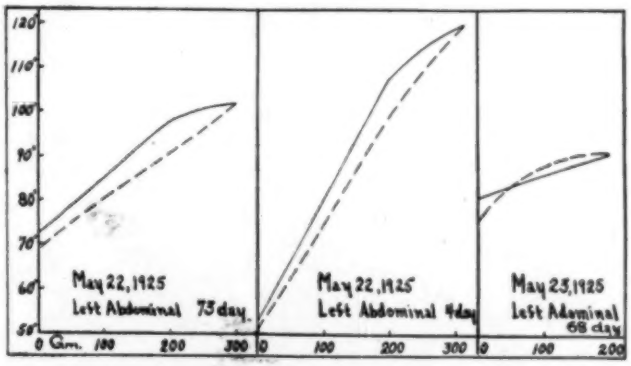

Fig. 2.—Curves correlating ankle flexion with flexing force applied in abdominal sympathetic experiments: Abscissas, tension applied to foot perpendicular to metatarsal bones; ordinates, degrees of flexion; solid line, operated limb; broken line, control. May 22, four days after operation, measurements forty minutes after decerebration. May 22, seventy-three days after operation, measurements fifty minutes after decerebration. May 23, sixty-eight days after operation, measurements one hour after decerebration.

rigidity on the operated side, but this difference was small compared with the individual fluctuations in both directions making up the average. Typical curves of tonus from these experiments are shown in figures 1 and 2. Figure 3 shows an animal in which the sympathectomized limb consistently showed more rigidity than its mate. The conclusion from these experiments was that, if there was any loss of tonus in consequence of the operation, it was insignificant. Certainly, decerebrate rigidity persisted at least approximately undiminished after sympathectomy, and continued to manifest its plastic features.

Since the paper describing these experiments went to press, a communication by Kuntz and Kerper [2] has appeared in which a somewhat more refined mechanical method is used for measuring tonus in the knee extensor muscles. A sympathectomized limb was compared with its mate in the otherwise intact animal; that is, the decerebrate preparation was not studied. The results of these authors seem to show a consistent diminution of tonus following sympathectomy, thus confirming Hunter and Royle; but the intact cerebrum complicates the problem of interpreting these experiments. In addition to their experiments on cats and dogs, they repeated Hunter's experiments on birds and

9. Liddell, E. G. T., and Sherrington, C. S.: Proc. Roy. Soc. **96**: 212, 1924.
10. Fulton, J., and Liddell, E. G. T.: Proc. Roy. Soc. **98**: 577, 1925.
11. Huggett, A. St. G., and Mellanby, J.: J. Physiol. **60**: viii, 1925.
12. Forbes, A.; O'Connor, J.; Hopkins, A. M., and Miller, R. H.: Muscular Rigidity With and Without Sympathetic Innervation, Arch. Surg., to be published.

corroborated his observations, which point strongly to a postural reflex mechanism involving the sympathetic nerves, more plastic than the corresponding reflex mechanism of the somatic nerves. The experiment seemed to show that whereas the somatic nerves tend to hold the wing in its normal posture but are inadequate to do so without the aid of the sympathetic nerves, the latter tend to make the wing retain whatever posture is imposed on it. The results are highly suggestive, but it is uncertain to what extent the mammalian neuromuscular organization resembles that of birds.

Orbeli [13] reports that stimulation of the sympathetic nerves simultaneous with threshold stimulation of the somatic nerves adds nothing to contraction until fatigue appears. With the onset of fatigue, sympathetic stimulation increases the contraction evoked by somatic stimulation. The sympathetic effect shows a much longer latency than muscular contraction evoked by

Fig. 3.—Appearance two hours after decerebration, six days after left stellate operation: persistent maintenance of greater rigidity in operated limb.

motor-nerve stimulation, a latency which approximates that of the action of the sympathetic nerves on the heart. These observations suggest that the nerve impulses reaching the muscle fibers by this channel act on them in a different manner from the ordinary somatic motor nerve impulses. Apparently they do not stimulate the muscle; that is, they do not cause contraction. Yet it is conceivable that at the sympathetic nerve endings a chemical effect of some sort is produced which alters the state of the muscle and, in some way that is yet to be explained, counteracts the tendency to fatigue.[14] It is conceivable that the loss of this influence may explain the observations of Hunter, Royle, Kuntz and Kerper, and others who have found changes in tonus following sympathectomy. Impairment of the ability to resist fatigue would tend to diminish the amount of tonic contraction, especially under conditions in which fatigue is likely to develop. Uncertainty as to the conditions favoring fatigue, complexity of the circulatory changes resulting from sympathectomy, and possibly other obscure phenomena are factors that tend to confuse this problem and render it difficult to determine why some experiments are positive and some negative.

In any case, we feel that there is no justification for differentiating two distinct components, contractile and plastic, in the tonus of mammalian skeletal muscle. Sherrington is often quoted in support of this view, but he never made such a distinction. He merely called attention to the remarkable degree of plasticity in the decerebrate limb traceable to proprioceptive reflexes.

The relief of spasticity following ramisection has been slight in most of the cases reported as successful. Some operations have been entirely unsuccessful.[15] Many factors may enter into the success of such an operation. Besides the actual effect of interrupting the sympathetic nerve path there are other possible causes of improvement, such as exercises, mental suggestion, hospital care, and nursing. It is probably premature to ascribe the successes to the operation itself, and it may be that incidental features in the treatment will be found responsible for whatever good has been accomplished.

13. Orbeli, L. A.: J. Petrograd M. Inst. **6**: 8, 1923; M. Sc. Abstr. & Rev. **10**: 486, 1924.
14. Gruber, C. M.: Am. J. Physiol. **33**: 335, 1914.

ANATOMY OF THE SYMPATHETIC NERVOUS SYSTEM

WITH REFERENCE TO SYMPATHECTOMY AND RAMISECTION *

S. W. RANSON
ST. LOUIS

The observations that have been made on the relation of the sympathetic nerves to disease have not yet been organized into a coherent system. And it is surprising that where the results obtained by the resection of these nerves are least open to question, they are not the results that one would have predicted from his knowledge of the structure and function of the sympathetic system. Probably many of the apparent contradictions will disappear as our knowledge becomes more precise. But although a great deal seems to have been accomplished and a means of surgical relief appears to have been found for what were previously hopeless conditions, work in this field should still be approached in the spirit of the investigator; i. e., with open minded skepticism.

The sympathetic nervous system is an aggregation of ganglions, nerves and plexuses through which the viscera, glands, heart, blood vessels and smooth muscle in other situations receive their innervation. The most conspicuous feature of the system is a pair of ganglionated nerve cords or sympathetic trunks which extend vertically through the neck, thorax and abdomen. Each sympathetic trunk is composed of a series of ganglions bound together by short nerve strands (fig. 1). Every spinal nerve is connected with the sympathetic trunk of its own side by one or more gray rami communicantes through which it receives sympathetic fibers for the control of blood vessels, sweat glands and smooth muscles of the hair follicles situated within the territory of its distribution. The majority of the nerve fibers taking origin in the ganglions of the sympathetic chain are distributed through the gray rami and the spinal nerves.

15. Crothers, Bronson: Cases Treated by Sympathetic Ramisection, Arch. Neurol. & Psychiat. **13**: 638 (May) 1925.

* From the Washington University Medical School.
* Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

The ganglions of the thoracic and abdominal portions of the chain are less concerned with visceral activity than with constriction of the peripheral blood vessels, erection of the hairs, and secretory activity of the sweat glands. But the upper thoracic and cervical ganglions bear a more intimate relation to the thoracic viscera, since they contain the cells of origin of postganglionic fibers for these viscera.

The thoracic and upper lumbar nerves are connected with the sympathetic chain by white as well as gray rami communicantes. These white rami contain both afferent and efferent fibers. The latter take origin from cells in the gray matter of the spinal cord, travel through the ventral root and white rami, and enter the sympathetic system, to terminate in synaptic relation with the nerve cells found in the sympathetic ganglions. They are often designated as preganglionic fibers, while those that arise in the ganglions and relay the impulses onward are called postganglionic. The gray rami contain postganglionic fibers; the white rami contain preganglionic fibers.

The majority of the preganglionic fibers turn either upward or downward in the sympathetic chain, and run for varying distances within it before ending in its ganglions. The cervical sympathetic trunk is composed exclusively of preganglionic efferent fibers, derived

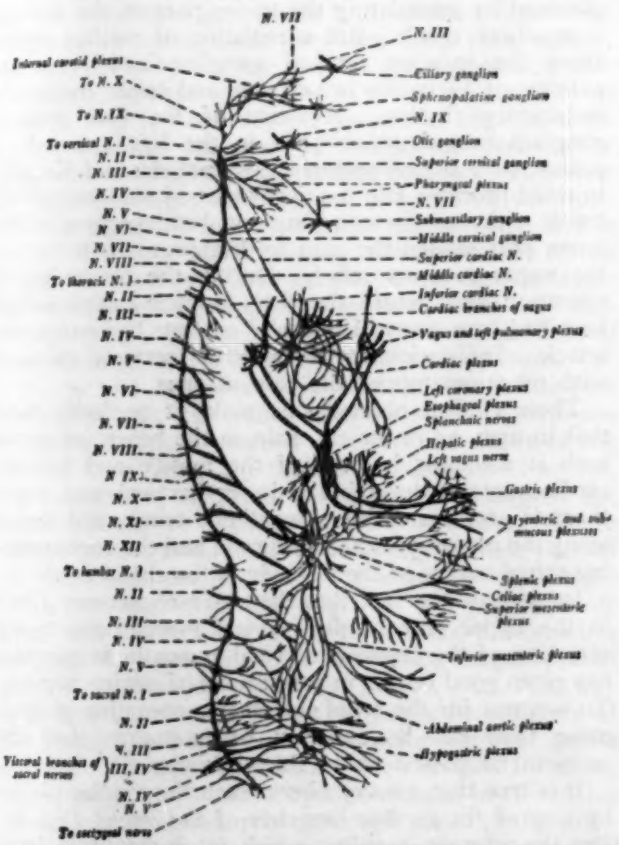

Fig. 1.—Diagram of the sympathetic nervous system. Those nerves and plexuses which are composed chiefly of fibers derived from cerebrospinal nerves are black; the sympathetic ganglions and the nerves and plexuses which are composed chiefly of fibers that arise in these ganglions are gray.

through the white rami from the upper thoracic nerves and ascending to terminate in the cervical sympathetic ganglions. The lumbar and sacral portions of the trunk are composed in the major part of descending fibers derived through the white rami from the lower thoracic and upper lumbar spinal nerves.

Those fibers of the white rami, which are concerned with the innervation of the abdominal viscera, pass into the splanchnic nerves and end in the celiac ganglion. These fibers reach the splanchnic nerves after passing

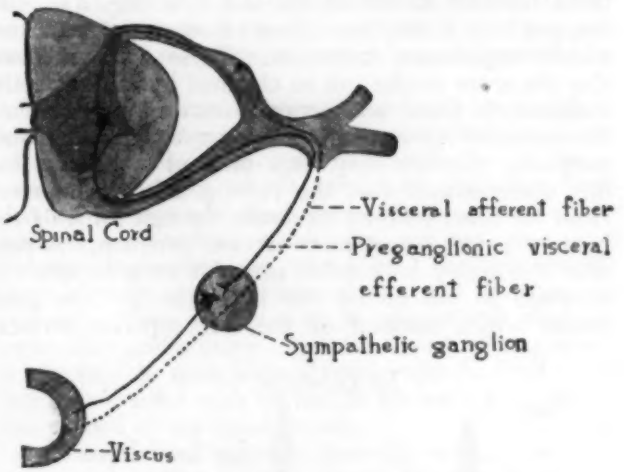

Fig. 2.—Diagram of a sympathetic reflex arc.

through the lower half of the thoracic sympathetic chain; but they are not interrupted in the chain ganglions through which they pass.

The sympathetic nervous system receives additional fibers from the spinal cord by way of the visceral branches of the third and fourth sacral nerves, and from the brain through certain of the cranial nerves.

There are, then, these three streams of preganglionic visceral efferent fibers: (1) the cranial stream from the third, seventh, ninth and tenth cranial nerves; (2) the thoracicolumbar stream, from the thoracic and upper lumbar spinal nerves by way of the white rami, and (3) the sacral stream from the second, third and fourth sacral nerves. The cranial and sacral streams belong to what is commonly called the parasympathetic system. Surgeons have confined their attention to the thoracicolumbar stream, i. e., to the sympathetic system proper, and we need not here consider the parasympathetic system in detail.

Most of the sympathetic nerves contain, in addition to the fibers already discussed, also sensory fibers, which convey impulses from the viscera to the spinal cord. These sensory fibers have their cells or origin in the spinal ganglions and reach the sympathetic system by way of the white rami. Visceral reflexes therefore travel arcs of at least three neurons each (fig 2). The impulses reach the spinal cord along visceral afferent fibers in the dorsal root and leave along preganglionic visceral efferent fibers in the ventral roots and white rami. These fibers end in sympathetic ganglions, and the impulses which they carry are relayed to involuntary muscle and glandular tissue by postganglionic fibers. The ganglions of the sympathetic trunk do not serve as reflex centers but only as relay stations in the conduction pathways from the spinal cord to the viscera.

The sensory fibers for the heart have recently acquired a new interest as a result of the relief of anginal attacks by cervical sympathectomy. In order to sever these fibers, Jonnesco [1] removed the middle and inferior cervical and the first thoracic ganglions of the left sympathetic chain in a case of severe angina pectoris. The patient, who was kept under observation for four years, remained free from anginal attacks.

1. Jonnesco, T.: Bull. Acad. de méd., Paris 84: 93 (Oct. 5) 1920.

That this operation stops anginal pain can be readily understood, since the direction in which the pain radiates indicates that the fibers concerned reach the sympathetic system through the white rami of the upper three thoracic nerves on the left side (fig. 3). But the work of Coffey and Brown [2] seems to make this simple explanation untenable. These authors found that the same results can be obtained by sectioning the sympathetic trunk and superior cardiac nerve below the superior cervical ganglion or by excising this ganglion. At first they were inclined to believe that this demonstrated that the painful afferent impulses from the heart reached the brain through some of the connections of the superior cervical ganglion. A possible but highly improbable path for such impulses is indicated by the dotted line in figure 3. The good results which removal of the left superior cervical

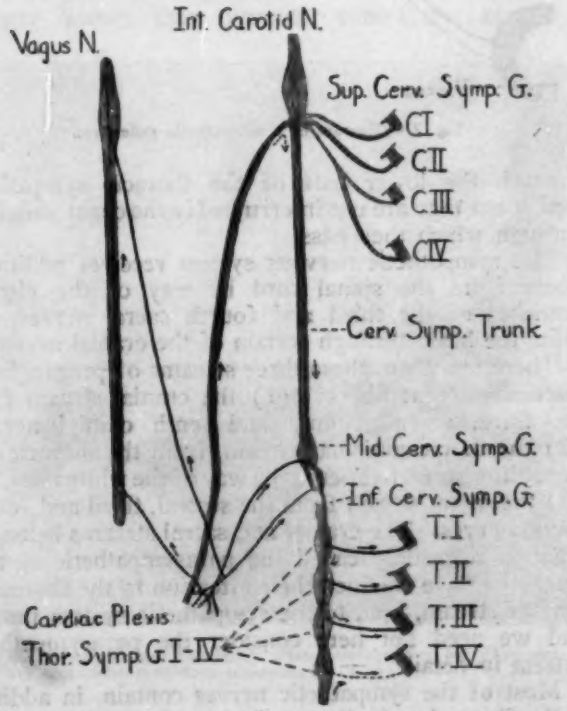

Fig. 3.—Diagram of the afferent pathways leading from the aortic plexus to the spinal cord and brain. The dotted lines represent a possible but highly improbable path.

sympathetic ganglion have given in the hands of many surgeons are not easily explained on the basis of what is known concerning the innervation of the heart. Histologic, physiologic and clinical evidence makes it almost certain that in high cervical sympathectomy the afferent fibers from the heart are not injured.

Histologically, it is possible to trace sensory fibers through the sympathetic system because of their relatively large size. By this method Edgeworth,[3] working with the dog, and I,[4] working with the cat, have shown that the large sensory fibers in the cardiac plexus come from the vagus and from the upper three thoracic nerves. From these thoracic nerves, large fibers can be traced through the corresponding white rami and sympathetic trunk to the inferior and middle cervical sympathetic ganglions, and the nerves passing from those ganglions to the heart. No large sensory fibers are found in the cervical sympathetic trunk above the level of the middle cervical ganglion. The specimens removed at operation from patients suffering from angina pectoris usually show no large sensory fibers in either the cervical sympathetic trunk or the superior cardiac nerve. There is therefore every reason to believe that the sensory pathways for the heart in man are essentially the same as those in the cat and dog.

Physiologic evidence supports this conception of the sensory pathways. Langley [5] found that, if the connection between the vagus and the superior cervical sympathetic ganglion had previously been divided, stimulation of the cervical sympathetic trunk or of the superior cervical sympathetic ganglion never caused struggling or other signs of pain.

The clinical evidence, which is most important because it applies directly to man, is equally clear. The pain in angina pectoris is referred to the areas of cutaneous distribution of the first three thoracic nerves of the left side. This shows that the painful afferent impulses in angina reach the spinal cord along these nerves. Recently Jonnesco and Ionescu [6] have investigated the sensory pathways for the heart during operations for angina carried out under local anesthesia. They found that, if the upper connections between the vagus and sympathetic trunk had previously been severed, neither pain nor reflex responses could be obtained by stimulating the upper part of the cervical sympathetic trunk. But stimulation of cardiac nerves from the inferior cervical ganglion and from the annulus of Vieussens caused pain and reflex changes in respiratory rhythm. Avulsion of the first thoracic ganglion caused severe pain in the left arm. In a patient with angina pectoris, Schittenhelm and Kappis [7] injected procaine into the upper part of the sympathetic trunk without effect on the pain, but injection of the lower part caused the pain to disappear. Injection of the vagus gave no relief. During the course of an operation and before the first thoracic ganglion had been laid bare, one of Leriche's [8] patients had an anginal attack. Infiltration of the inferior cervical ganglion with procaine stopped the pain at once.

These clinical observations make it perfectly clear that in man, as in the cat, pain in the heart and aortic arch is mediated by way of the middle and inferior cardiac nerves through the lower cervical and upper thoracic portions of the sympathetic trunk, and thence along the upper thoracic white rami and the corresponding spinal nerves of the left side to the spinal cord.

In spite of the fact that there are no sensory fibers in the upper part of the cervical sympathetic trunk, resection of the superior cervical sympathetic ganglion has given good results in many cases of angina pectoris. To account for the relief which this operation gives is more than can be expected of anatomy. Let the problem be passed on to the physiologist.

It is true that sensory fibers reach the cardiac plexus by way of the cardiac branches of the vagus (fig. 3). But the afferent impulses which reach the brain from the heart by way of the vagus probably seldom give rise to pain but expend themselves in the production of reflexes, as, for example, the lowering of blood pressure as a result of the stimulation of the vagodepressor fibers ending in the arch of the aorta.

2. Coffey, W. B., and Brown, P. K.: Surgical Treatment of Angina Pectoris, Arch. Int. Med. **31**: 200 (Feb.) 1923; **34**: 417 (Oct.) 1924.
3. Edgeworth, F. H.: J. Physiol. **13**: 260, 1892.
4. Ranson, S. W.: J. Comp. Neurol. **29**: 313, 1918.
5. Langley, J. N.: Lancet **2**: 955 (Nov. 8) 1924.
6. Jonnesco, T., and Ionescu, D.: Ztschr. f. d. ges. exper. Med. **48**: 490, 1926
7. Schittenhelm, A., and Kappis, M.: München. med. Wchnschr. **72**: 753 (May 8) 1925.
8. Leriche, R.: Presse méd. **33**: 1361 (Oct. 14) 1925.

Eppinger and Hofer [9] have advocated section of the depressor branch of the vagus for the relief of angina pectoris. But it is doubtful whether this nerve has a separate existence in man. The uncertainty as to the existence and topography of this nerve is evident from the directions given for its identification. The vagus is dissected free up to the jugular foramen, and all of its branches are exposed and followed for some distance. Only those twigs which run free into the thorax, or those which, after separation from the vagus or from the superior laryngeal nerve, join the vagus again are considered as belonging to the depressor nerve. These directions are in themselves evidence that there is no well defined depressor nerve in man. It is possible that the twigs carrying depressor fibers might be identified by stimulation; but Eppinger and Hofer, out of consideration for their patients, failed to make the test in any of their cases. Odermatt [10] stimulated what he thought was the depressor, but this had no effect on the blood pressure. Wenckebach [11] admits that in many cases there is no clearly differentiated depressor nerve.

Through the work of Hunter [12] and Royle,[13] attention has recently been directed to the possibility that the tonus of skeletal muscle may be maintained by the sympathetic system. It is well known that the muscles are innervated by unmyelinated as well as myelinated fibers (Boeke and Kulchitsky). Degeneration experiments tend to show that part of the unmyelinated fibers take origin in the sympathetic ganglions. But observations, recently made by Hinsey and not yet published, prove that many, perhaps a majority of them, are not of sympathetic origin, since they are present in large numbers in the terminal branches of the motor nerve after degeneration of all of the sympathetic fibers. A review of the physiologic evidence for and against the sympathetic origin of tonus would be out of place in this paper. I wish to state, however, that the results of my experiments on cats have convinced me that the sympathetic nervous system is not responsible for the exaggerated tonus of the skeletal muscles which follows decerebration, or for that caused by tetanus toxin.

As yet no attempts have been made to interfere surgically with the craniosacral autonomic (parasympathetic) system by section of either the vagus or the visceral branches of the third and fourth sacral nerves. But section or, in certain cases, mere blocking of the splanchnic nerves offers attractive possibilities. These nerves contain sensory fibers and preganglionic visceral efferent fibers derived from the lower seven thoracic white rami communicantes (fig. 1). The preganglionic fibers end in the celiac ganglion, whence the impulses are relayed by postganglionic fibers along the periarterial plexuses composing the solar plexus. In this way inhibitory impulses are conveyed to the musculature of the stomach and intestines, and motor impulses to the pylorus. The splanchnics have been divided for atony and ptosis of the stomach by Bircher, and in two of his cases Hahn [14] made a roentgenologic study of the stomach. In both cases, the stomach returned to the normal shape and position and the pylorus became relaxed following the operation. In a patient with a diagnosis of gastric ulcer, Braun [15] found no signs of ulcer when the abdomen was opened. Because of the severe pain which the patient had been suffering, Braun sectioned the splanchnic nerves, with apparently good results.

Havlicek [16] blocked the splanchnic nerves in two cases of anuria in children with scarlet fever. His object was to interrupt temporarily the vasoconstrictor impulses to the arterioles in the kidney with the idea of stopping the spasm of these vessels, which was responsible for the anuria.

Periarterial sympathectomy, advocated by Leriche [17] as a cure for many painful and trophic disorders of the extremities, has caused renewed interest in the innervation of the blood vessels. It is said that after resection of the sympathetic plexus which surrounds the femoral or brachial artery the corresponding limb becomes hyperemic, old ulcers heal rapidly, and the pains of angiospasm, tender stumps and causalgia are relieved. These results seem to indicate that the vasoconstrictor and sensory fibers for the peripheral vessels accompany the main arterial trunks into the limbs. But this is in conflict with all that is known concerning the innervation of the blood vessels.

Vasoconstrictor impulses leave the spinal cord along preganglionic fibers, which reach the sympathetic system through the thoracic and upper lumbar spinal nerves and the white rami associated with them. The

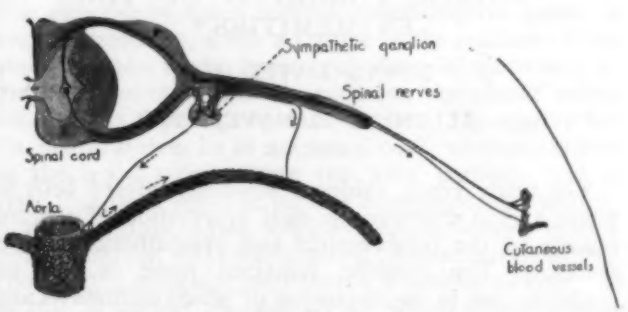

Fig. 4.—Diagram of the innervation of the blood vessels. The arrows with broken shafts indicate the path for vasoconstrictor impulses according to the theory of Leriche.

postganglionic vasoconstrictor fibers arise in the ganglions of the sympathetic chain, run by way of the gray rami communicantes to the spinal nerves, and follow these and their sensory branches to the subcutaneous tissue, where they are given off for the innervation of the small arteries and arterioles (fig. 4). Other fibers are given off from the larger nerves and reach the main arteries at various points along their course. A different arrangement holds for the vessels of the thoracic, abdominal and cranial cavities, since the vasoconstrictor fibers for these vessels do not join the spinal nerves but run directly to the vessels and accompany them to their distribution.

It is well established that in animals practically all the vasoconstrictor fibers for an extremity are found in the spinal nerves, and very few, if any, accompany the larger arteries for long distances toward the periphery. It had previously been universally conceded that they follow the same course in man. But the results of periarterial sympathectomy are out of harmony with this conception. In order to explain the hyperemia that results from this operation, Leriche assumes that in man the vasoconstrictor fibers for the cutaneous blood vessels have a course analogous to that taken by the fibers for the splanchnic vessels; i. e., they join the aorta or other large arteries in the thoracic and abdomi-

9. Eppinger, H., and Hofer, G.: Therap. d. Gegenw. **64**: 166, 1923.
10. Odermatt, W.: Deutsch. Ztschr. f. Chir **182**: 341, 1923.
11. Wenckebach, K. F.: Brit. M. J. **1**: 809 (May 10) 1924.
12. Hunter, J. L.: Brit. M. J. **1**: 197 (Jan. 31), 251 (Feb. 7), 298 (Feb. 14), 350 (Feb. 21), 398 (Feb. 28) 1925.
13. Royle, N. D.: M. J. Australia **1**: 77 (Jan. 26) 1924.
14. Hahn, O.: Ergebn. d. Chir. u. Orthop. **17**: 1, 1924.
15. Braun, W.: Zentralbl. f. Chir. **48**: 1038 (July 23) 1921.
16. Havlicek, H.: Zentralbl. f. inn. Med. **46**: 465 (May 16) 1925.
17. Leriche, R.: Ann. Surg. **74**: 385 (Oct.) 1921.

nal cavities and make their way to the periphery in the periarterial sympathetic plexuses. Against this assumption there should be recorded the observations of Kramer and Todd [18] showing that in man branches are given off by the large nerves to the principal arteries of the extremities at various points along their course. Furthermore, it is improbable that there is any fundamental difference in the innervation of the blood vessels in man and the laboratory animals.

It will be evident from the foregoing discussion that no satisfactory explanation of the hyperemia following periarterial sympathectomy has yet been presented. It is equally impossible to explain the relief from pain which some patients experience after this operation. That there are sensory fibers supplying the blood vessels is well known, but these for the most part at least run centrally in the spinal nerves, and there is no reason to believe that they run in the periarterial sympathic plexuses for any considerable distance.[19] Perhaps the relief from pain may depend on the hyperemia and resultant improved peripheral nutrition.

THE EFFECT OF SYMPATHECTOMY ON SPASTIC PARALYSIS OF THE EXTREMITIES *

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AND
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For many years, evidence has been offered both to prove and to disprove the dual innervation of striated muscle by the cerebrospinal and sympathetic nervous systems. The question remained more or less an academic one, in the discussion of which anatomists and physiologists were the leading figures. Recently, however, the surgeon has entered the field mainly as a result of the suggestion by Royle, supported by Hunter, that the spasticity of paralyzed extremities might be decreased by surgically attacking the sympathetic innervation to the muscles.

The basis for such surgical therapy may be stated rather briefly. It is assumed that striated muscle has a dual innervation from the sympathetic and cerebrospinal nervous systems. It is predicated that the normal tonus of skeletal muscle may be divided into two components; namely, a contractile and a plastic element. Further, that in spastic extremities there is an increase of the plastic component of tone. Finally, it is assumed that the sympathetic innervation to striated muscle subserves this plastic element of tone. It becomes obvious that following such a line of reasoning leads to the conclusion that, to decrease spasticity or hypertonus in an extremity, it becomes necessary to remove the sympathetic innervation to the muscles involved.

Such an hypothesis depends on several important principles, each of which must be examined carefully and should be firmly established before a clinical application is made. Otherwise our surgical therapeusis may outdistance our fundamental knowledge, and we may add more confusion to the surgery of the sympathetic nervous system, which has already suffered from a tendency toward clinical empiricism.

SYMPATHETIC INNERVATION OF SKELETAL MUSCLES

The definite establishment of the fact that skeletal muscle has a sympathetic innervation underlies the entire problem of the relation of the sympathetic system to increased tone in the muscles of an extremity. Further, if we grant that such a supply is present, we must know absolutely that such an innervation initiates, maintains or in some manner influences muscle tone.

In 1879, Tschiriew [1] demonstrated two systems of motor nerve fibers to striated muscle. In a study of the snake he pointed out the presence of nonmedullated nerve fibers with characteristic end organs, in addition to the usual medullated nerve fiber motor end plates. It should be noted, however, that the nonmedullated nerve fibers which ended typically in a grapelike ramification could be traced as a branch of a medullated nerve fiber and were thus shown not to be entirely independent structures. Three years later, Bremer [2] described fine unmyelinated nerve fibers entering the motor end plates in frogs and lizards. Some of these nonmedullated fibers had lost their myelin in their course in the muscle; some were branches of medullated fibers, but others arose from an unmyelinated plexus although they could not be traced farther centrally. Later, Perroncito [3] came to similar conclusions, and it remained for Boeke [4] to state that the endings described by these workers were not of independent origin, as they had stated, but that still other nerve endings, which he designated as "accessory," were the actual terminations of the nonmedullated fibers of sympathetic origin. Boeke described a nerve fiber and ending of each type situated hypolemmaly on a single muscle fiber. That is, a medullated system of fibers and end organs of cerebrospinal origin and a nonmedullated system of fibers and end organs of sympathetic origin. This author sectioned the oculomotor nerve near the brain stem in cats and found degeneration of both medullated and nonmedullated fibers in the levator palpebral superioris muscle. Some nonmedullated fibers remained intact, and these he regarded as of sympathetic origin.

Kulchitsky [5] repeated Tschiriew's work on the snake and stated that a single muscle fiber receives only one motor nerve ending. He pointed out that some muscle fibers receive an epilemmal ending derived from a nonmedullated nerve fiber, while others receive a hypolemmally placed medullated nerve fiber. Using Kulchitsky's personal preparations, Dart [6] confirmed the presence of two types of nerve endings but differed somewhat from the former in an interpretation of the method of innervation of the muscle fibers. Kuntz and Kerper [7] found unmyelinated nerve fibers of sympathetic origin in the intercostal muscles of dogs after they allowed time for degeneration of the somatic nerves to these muscles. Garven [8] has only recently confirmed the presence of Boeke's accessory fibers and endings, which he stated were quite independent and were of sympathetic origin.

As Langley [9] has stated, if all striated muscles contain sympathetic nerve endings, it is unusual that they cannot

18. Kramer, J. G., and Tood, T. W.: Anat. Record **8**: 243, 1914.
19. Wiedhopf, O.: München. med. Wchnschr. **72**: 417, 1925.

* From the Department of Neurologic Surgery and the Laboratory of Experimental Research, Northwestern University Medical School.

* Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Tschiriew, S.: Arch. de physiol. **11**: 89, 1879.
2. Bremer: Arch. f. mikr. Anat. **21**: 165, 1882.
3. Perroncito: Arch. ital. de biol. **41**: 183, 1904.
4. Boeke, J.: Anat. Anz. **35**: 193, 1910; Internat. Monatschr. f. Anat. u. Physiol. **28**: 377, 1911.
5. Kulchitsky, N.: J. Anat. **58**: 152, 1924.
6. Dart, R. A.: J. Comp. Neurol. **36**: 441, 1924.
7. Kuntz and Kerper: Proc. Soc. Exper. Biol. & Med. **22**: 23, 1924.
8. Garven, H. S. D.: Brain **48**: 380 (Sept.) 1925.
9. Langley, J. N.: The Autonomic Nervous System, Cambridge, Heffer & Co., 1921.

be seen in methylene blue preparations of the frog's sartorius muscle, in which somatic nerve endings and nerve fibers around blood vessels are brought out with ease.

Therefore, in spite of evident contradictory facts and from purely histologic evidence based on studies of sections stained by the silver impregnation methods, it is probable that all striated muscle contains two types of nerve fiber endings. The larger medullated fibers are those derived from the cerebrospinal system; while the smaller, unmyelinated fibers which end in rings, loops or nets either within the sarcoplasm of a typical end plate, or as small independent end plates, are derived from the sympathetic nervous system. However, these facts afford no conclusive evidence of the function of these fibers.

On the basis of these facts, Hunter and Royle [10] formulated the hypothesis that there are two groups of muscle fibers with distinct motor innervation and separate and specific function. They stated that the cerebrospinal motor nerve endings were concerned in ordinary muscle movements and with a component of muscle tone which they termed "contractile." They believed the sympathetic or nonmedullated nerve endings to be related to the maintenance of a second element of muscle tone, the so-called plastic tone, which is enormously increased in spastic extremities.

COMPONENTS OF MUSCLE TONE

Based on Boeke's histologic work, Langelaan [11] proposed that each skeletal muscle fiber has a dual function as well as a dual structure. He predicated the existence of a sarcoplasm innervated by the sympathetic system. In this mass lies the striated tissue, which receives its innervation from the cerebrospinal nervous system. As a corollary, he divided muscle tone into a plastic element dependent on the sarcoplasm and its sympathetic innervation, and a contractile component affected by the striated apparatus and innervated by the cerebrospinal nerves. Langelaan attempted experimentally to demonstrate the presence of these two types of muscle tone. He measured the elasticity and plasticity of muscle and pointed out the differences in the two kinds of muscular activity. Forbes [12] has aptly stated that such differences may result from the various ways in which muscle fibers contract in different types of reflexes, and it need not necessarily be assumed that there are two types of muscle tone. Hunter and Royle differed somewhat from Langelaan in that they believed that, instead of one muscle fiber subserving two elements of tone, there are two sets of muscle fibers within any given muscle. The one initiates contractile tone and receives its innervation from the cerebrospinal system, and the second set of fibers serve for plastic tone and are innervated by the sympathetic nervous system. They have interpreted plastic tone as that element which is inhibited during movement and which in a normal muscle maintains an attitude against gravity. It follows that when plastic tone is abolished, the limb passively assumes an attitude determined by gravity, and when increased, as in spasticity, the limb tends to maintain any given position imposed on it during an exhibition of contractile tone. Carrying this idea to the decerebrated animal, they have stated that the extended position of the extremities assumed following decerebration is an evidence of contractile tone, while the maintenance of that posture is the function of plastic tone.

It will be apparent at once that such a theory of muscle tone is in direct opposition to Sherrington's conception of tone as a reflex reaction, the stimulus for which comes from a proprioceptive source and the purpose of which is to maintain posture. Sherrington believed that there are two reflex pathways concerned in the innervation of striated muscle. The one has to do with initiating and regulating the state of tension within the muscle itself, the reflex reactions of which are tonic in character. Stimulation of the second, or phasic, reflex pathway results in reactions that are a series of repeated but short-lived movements. Both the tonic and the phasic pathways are acted on by the cerebral motor cortex, and both employ the striated muscle and the neurons of the anterior horn cells of the spinal cord as the single effector mechanism. The extensor groups of muscles are mainly concerned in the effector side of the tonic reflex pathway, and the state of muscle tone resulting affords the basis for posture. The stimuli necessary to produce an adequate reaction from this reflex arc arise within the muscle itself and within the otolith organs of the labyrinths and in proprioceptive centers in the entire body musculature. The effective stimulus for the proprioceptive center is muscle stretching, while a change in the relation of the otolith organs to the horizontal plane in space acts as the adequate stimulus. In contrast, the phasic reflex arc employs flexor groups of muscles. The centers for the phasic system lie in the spinal cord, whereas centers in the brain stem govern the tonic pathway. It is clear that there must be perfect harmony and coordination between these two reflex systems governing muscle tone. Without this complemental cooperation, smoothly coordinated muscular movements would be lacking. It is this phase of the subject to which Sherrington's theory of reciprocal innervation applies.

It is obvious that the hypothesis formulated by Langelaan, Hunter and Royle radically breaks away from many well proved and established physiologic facts in regard to muscle tone. Incontrovertible evidence must be given before such a theory can be accepted in whole and applied clinically.

EXPERIMENTAL EVIDENCE

Since they believed that plastic and contractile tone are innervated by separate systems, Royle and Hunter attempted experimentally to isolate these functional elements. They removed the lumbar sympathetic rami on one side of a goat, and after a considerable interval performed decerebration by the usual guillotine method, which, as is well known, is accompanied by considerable hemorrhage, shock and inaccuracy in determining the exact level of decerebration. They found that under such experimental conditions the limb so denervated fell into an abducted, semiflexed attitude, while on the unaffected side extensor rigidity was marked. This result was explained as due to a loss of plastic tone. The second type of experiment performed by these authors consisted in an endeavor to isolate plastic tone. They used the fowl as an experimental animal because of the anatomic separation of the cerebrospinal and sympathetic innervation to the wings. They severed the cervical posterior roots, thus leaving the sympathetic supply intact and consequently assumed they had removed contractile tone and had retained plastic tone.

10. Royle, N. D.: M. J. Australia **1**: 77 (Jan. 26) 1924. Hunter, J. I.: Ibid **1**: 86 (Jan. 26), 581, 590 (June 14) 1924.
11. Langelaan, J. W.: Brain **38**: 325, 1915; **45**: 434, 1922.
12. Forbes, Alexander, in discussion on Crothers, Bronson: Cases Treated by Sympathetic Ramisection, Arch. Neurol. & Psychiat. **13**: 639 (May) 1925.

Trendelenburg [13] has recorded careful experiments of a similar nature. This investigator carried out very thorough anatomic and histologic controls on his birds after they had been killed. He performed extensive divisions of the cervical and thoracic posterior roots, which of necessity removed both somatic and sympathetic efferent innervation. Trendelenburg concluded that such denervation of a single wing produced no drooping or loss of voluntary or reflex movements. The most common and logical objection offered to Royle and Hunter's work is that in all probability they produced injury to the ventral as well as to the posterior roots.

With Pollock,[14] we repeated the work of Royle and Hunter with respect to the influence of sympathetic denervation on the pattern of decerebrate rigidity. Cats were employed as experimental animals. Hunter regarded the cat as an unsuitable animal for the investigation of problems of tone, on the ground that the variability of contractile tone masked the loss of plastic tone. This animal in Sherrington's and Magnus and de Kleijn's hands has proved to be of great value in working out just such problems. Eighteen animals were operated on and were kept under observation for periods of from two to nine weeks. No changes in the character of voluntary or reflex movements were observed. Twelve cats were decerebrated by ligation of the basilar artery at a selected level and simultaneous ligation of the common carotids. The fact that animals so operated on present active Magnus and de Kleijn phenomena forty-eight hours after ligation precludes the objection of a hypertonus due to asphyxial spasm. In all these animals the onset and maintenance of decerebrate rigidity was exactly similar in all four extremities, including the one previously deprived of its sympathetic innervation. Other workers, including Cobb,[15] Barenne,[16] Kuno,[17] Lopez,[18] von Bruck,[18] von Rijnberk [19] and Towers,[20] arrived at a similar conclusion; namely, that normal muscle tone and the pattern of decerebrate rigidity do not depend on sympathetic innervation.

Recently Ranson [21] has applied continuously a solution of nicotine to the posterior roots and spinal ganglions of a cat after the onset and maintenance of decerebrate rigidity. He noted that the rigidity in the corresponding limb disappeared within ten minutes, although the reflex activity remained. He believes that the impulses responsible for plastic tone pass through synapses of a sympathetic character in the spinal ganglions; that is, through the pericellular nerve networks which surround spinal ganglion cells. This would mean that such impulses are relayed to the muscles, as vasodilator impulses are to the skin, by sensory fibers acting antidromically or by true postganglionic fibers.

CLINICAL EVIDENCE

Many difficulties have arisen in the experimental identification and isolation of contractile and plastic tone. It is obvious that a like difficulty is present if we attempt to say from clinical examination that in one case plastic tone is increased and in another it is decreased. The lack of any standard of comparison or precise method of measurement adds to the confusion.

Hunter and Royle applied their theories of tone to selected cases of spastic paralysis and suggested sympathetic ramisectomy to relieve these patients of the presence of excessive plastic tone. They pointed out certain criteria which should be observed in the selection of cases suitable for operation. Preferably these methods to detect increase of plastic tone should be available at the bedside and should be easily applied. The increase of resistance of the muscles to passive movements, the "hung-up" or steplike tendon reflex, and the presence of sufficient mentality to carry out a program of reeducation are the main indications given by these authors.

After considerable clinical and operative work, Hunter and Royle stated that patients with an increase in plastic tone as the result of paralysis agitans, postencephalitic Parkinson's disease and degenerative or traumatic lesions of the spinal cord were unsuitable for operation. Consequently, they confined their attention to cases of Little's disease, traumatic cerebral cortical lesions and vascular cortical lesions. They have reported definite improvement in such patients after removal of the sympathetic rami.

With Pollock, we have performed ramisectomy and in some cases have completely removed the sympathetic chains in the cervical or lumbar regions, in cases of paralysis agitans, postencephalitic Parkinson's disease, spinal lateral sclerosis, cerebral hemiplegia, Little's disease and spastic paraplegia in extension from a traumatic spinal cord lesion. All these patients were normal mentally and had sufficient cerebral motor control to justify a removal of plastic tone. Careful kymographic and electromyographic records of reflex and voluntary actions and response to faradic stimulation were taken before and after operation. We also made complete roentgen-ray studies to determine the effect of interruption of the abdominal sympathetic trunk on the movements of the gastro-intestinal tract. Motion pictures of the gait, range of active movements, resistance to passive movements and reflexes were made of each of the patients. All the patients exhibited shortening and lengthening reactions on reflex stimulation. The tendon reflexes showed a "hung-up" characteristic; some patients, of course exhibited this more than others.

In our operations we employed several means of approach. We removed the entire cervical sympathetic trunk and its ganglions, including the stellate ganglion; we removed the latter alone and we have removed the abdominal sympathetic trunk on one or both sides from the second lumbar ganglion to and including the fourth lumbar ganglion. We have performed the latter operation both by the lumbar approach advocated by Royle and through a midline abdominal incision.

In order that we might properly evaluate the effects of sympathectomy, we purposely refrained from suggesting to the patient that he might be improved. We did not institute physiotherapy until a reasonable time had elapsed after operation, so that any results obtained could be ascribed alone to the surgical procedure.

We have given elsewhere the graphic records and results of our operations in these cases. We have examined them again eighteen months after operation, and our findings confirm our original conclusions. We are agreed with Hunter and Royle that no benefit from such an operative procedure results in cases of paralysis agitans, postencephalitic Parkinson's disease and degenerative or traumatic lesions of the spinal cord. We must also add that we have been unable to observe or

13. Trendelenburg, W.: Arch. f. Anat. u. Physiol. (physiol. sect.) **1**, 1906.
14. Kanavel, A. B.; Pollock, L. J., and Davis, Loyal: Relation of the Sympathetic Nervous System to Muscle Tone, Arch. Neurol. & Psychiat. **13**: 197 (Feb.) 1925.
15. Cobb, S.: Am. J. Physiol. **46**: 478 (July) 1918.
16. Barenne, J. G.: Arch. f. d. ges. Physiol. **166**: 145, 1916.
17. Kuno, Y.: J. Physiol. **49**: 138, 1915.
18. Lopez and von Bruck: Arch. f. d. ges. Physiol. **166**: 55, 1916.
19. Von Rijnberk: Arch. de Physiol. **1**: 702, 1916.
20. Towers, S.: Personal communication to the authors.
21. Ranson, S. W.: Personal communication to the authors.

record any improvement in the cases of Little's disease or cerebral hemiplegia due to a vascular lesion. Consequently, our conclusions have been entirely negative and have failed completely to offer any confirmation of Royle and Hunter's work.

COMMENT

Tone is a property of muscle, the components of which are today incompletely known and the physiology of which is poorly understood.

Three mechanisms may be accepted as being concerned in hypertonicity: the corticospinal tract, the extrapyramidal system, represented largely by the striate body, and the brain stem mechanism. It may be possible that a fourth mechanism may play a considerable part; namely, cerebellar cocontraction. Finally, there may be some peripheral mechanism of muscle metabolism, related to tone and particularly active in such diseases as tetany, in which condition muscular cramps, changes in electric excitability and irritability of muscles are found.

It has been suggested that that element of muscle tone which is related to the postural, in contradistinction to the kinetic, system is mediated by the sympathetic nervous system through a high reflex arc in the pons and a lower one in the cord. The afferent and efferent limbs of the lower arc would arise and terminate in the sarcoplasm of skeletal muscle. It would seem to be unreasonable to assume that such a reflex pathway would serve all of the functional mechanisms just mentioned. If it be true, then sympathectomy should abolish that tone which in spasticity is due to hyperactivity of postural tone. It has been stated that this type of tone may be recognized by characteristics which were described by Sherrington as the plastic tone found in decerebrate animals and which are present in all cases of hemiplegia, cerebral diplegia of pyramidal tract origin and paraplegia in extension. We have been unable to record any graphic changes in the condition of muscle tone in any of the clinical lesions mentioned above, following removal of the sympathetic innervation to an extremity. We have also been unable to record or observe any changes in the spasticity produced by the release of function in striatal disease or in traumatic or degenerative lesions of the spinal cord which have for the most part involved the lateral pyramidal tracts.

If hypertonicity is the result of removal of the inhibition of corticospinal influences alone or in combination with hopothetic cerebral sympathetic fibers, it seems strange that complete removal of the brain cephalad to the red nucleus does not produce spasticity in animals. If, on the other hand, hypertonicity is due alone to removal of the influences of the corticospinal tract and the upper levels of a sympathetic reflex arc, it is difficult to explain why complete section of the spinal cord fails to produce spasticity. It cannot be because of spinal shock or diaschisis because of the existence of mass reflexes in a so-called isolated segment of the cord. It would seem that a large amount of investigation is necessary to show why incomplete lesions do, and complete lesions, with the exception of those in the brain stem, do not produce hypertonicity. If there are a number of factors concerned with increase of tone, then it is necessary quantitatively to measure the diminution of tone, if any, that results from removal of the sympathetic nerve supply. This is necessary to obviate the inaccurate interpretation of any clinical improvement as due to lessened muscle tone, when other factors may be involved. We feel that changes in muscle tone cannot be determined by the ordinary clinical examination, by the statements of patients or even by clinical results which have before been produced by hope and reeducation. It must be demonstrated by careful physiologic research and objective measurement that certain changes have occurred.

It is possible that the sympathetic nervous system may have some function relating to muscle tone; or, better, it may have some function dealing with the metabolism of muscles so that under certain conditions the contractility of a muscle may be changed by the removal of sympathetic impulses. Such a function may deal with colloidal chemistry. It may be that the increased vascularity that follows sympathectomy may influence the quality of muscle tone. It may also be possible that, because of modified metabolism or circulation, the character of the afferent impulses from muscles is changed; as an example, the occurrence of pain in an anemic muscle. As Pollock has suggested, it may further be possible that certain apparent changes in range of motion may be due to vasodilatation in the synovial membrane and a concomitant increase in secretion of synovial fluid. Under any of these conditions, the changes produced by sympathectomy will probably be found to be temporary, as are the vasomotor skin changes.

CONCLUSIONS

1. Histologic evidence points to the dual innervation of skeletal muscle from the cerebrospinal and sympathetic nervous systems.

2. Experimental removal of the sympathetic trunks in cats produces no effect on normal tone that can be observed or recorded.

3. The onset and maintenance of decerebrate rigidity in cats is unchanged after the removal of the sympathetic innervation to an extremity. With the exception of Royle's work on goats, the evidence in the literature is in agreement on this point.

4. The problem of muscle tone is extremely complicated, and one or all of several mechanisms may be responsible for changes in muscle tone. At present there is no accurate clinical method for measuring changes in muscle tone. Lengthening and shortening reactions and "hung-up" reflexes alone are insufficient indications for operation.

5. Kymographic tracings of tendon reflexes, faradic stimulation, active and passive motions and tremors before and after removal of the sympathetic nerve supply have shown no change in cases of paralysis agitans; postencephalitic Parkinson's disease; system degenerations of the spinal cord, such as lateral sclerosis; traumatic lesions of the spinal cord; cerebral hemiplegia, and Little's disease.

6. The sympathetic nervous system may have some function dealing with the metabolism of muscle, so that under certain conditions the contractility of a muscle may be changed by the removal of sympathetic impulses. Such a function would probably be chemical in nature.

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[EDITORIAL NOTE.—This paper, together with the papers by Drs. Forbes and Cobb, and by Dr. Ranson, which precede it, constitute part of a symposium on "Sympathectomy." The concluding two papers, by Drs. McNealy and Cutler, respectively, together with the discussion, will be published in the next issue of THE JOURNAL.]

ARACHNIDISM

A STUDY IN SPIDER POISONING *

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The popular belief that spider bites are poisonous has found little support in scientific writings. Entomologists and arachnologists have been almost unanimous in asserting the innocuous nature of spiders, and medical men have been accused of unscientific readiness to accept popular reports without attempting to establish the truth or falsity of the facts claimed. A spider bite, as any other wound, may easily become infected; thus, definite cases of tetanus, anthrax, erysipelas, cellulitis and septicemia, proved at necropsy and by bacteriologic examinations, have been reported as arising from spider bites by Lawrence, Garcia, Wight, Davison and Presley. Moreover, the very measures adopted for the treatment of a spider bite may in themselves be the cause of many of the symptoms reported, as the local sloughs following the injection of ammonia water or the application of caustics, or the symptoms of intoxication following the free imbibition of "stimulants." The possibility of coincidence must also be borne in mind, and the relationship between a spider bite and a subsequent pathologic condition cannot be determined solely by a "post hoc, ergo propter hoc" reasoning in a single case.

Nevertheless, the almost universal belief in the poisonousness of spider bites among peoples separated by every difference in longitude and civilization, and the persistent reports of serious results from spider bites, are not entirely lacking in foundation. The large, hairy tarantula is, to the lay mind, the most dangerous of the poisonous varieties, although authentic cases only partially support its terrible reputation.

There is abundant evidence that the bite of the shiny black *Latrodectus* is attended with severe systemic poisoning. Virtual epidemics of arachnidism from the bite of *Latrodectus malmigniatus* were reported in Spain in 1830, 1833, and 1841, and similar cases have since been described by many observers in France, Italy and Corsica. Other epidemics due to *Latrodectus karakurt* were reported from the Russian provinces of the Kirghiz Steppes in which animals as well as human beings were the victims. More than a dozen writers have recorded severe consequences from the bite of *Latrodectus scelio*, the "katipo" of New Zealand and Australia, and from the "mena vodi" of Madagascar. In South America, clinical and laboratory reports from more than thirty authors have established spider bite poisoning as a clinical entity. During the last hundred years more than 150 cases of poisonous spider bites have been reported by thirty-three physicians in the United States, and fifteen cases of this malady have been studied at the Los Angeles General Hospital during the last decade.

LATRODECTUS MACTANS

Latrodectus mactans is probably the only poisonous spider in the United States. Besides its many scientific synonyms, it has many popular nicknames, as the "black widow," the "shoe-button" spider, the "hourglass" spider, the "T dot" spider, and the "po-ko-moo." It is a shiny, coal-black spider, usually brilliantly marked with red or yellow or both. The markings vary greatly, the most constant being a bright red patch, shaped somewhat like an hourglass, on the ventral surface of the abdomen. The female, which is always the one responsible for the bites reported, is often half an inch in length when fully grown, and may stretch its long, glossy legs over a spread of as much as 2 inches. The globose abdomen, somewhat larger than the cephalothorax, resembles a black shoe button, although it may have one or more red spots along the middle of the back, and over the spinnerets, in addition to the large ventral patch. The male is much smaller than the female, and is even more conspicuously marked, having, in addition to the marks of the female, four pairs of stripes along the sides of the abdomen. The young spiders are much lighter in color, and gradually don the glossy black coat in a series of molts during a period of about forty days.

Previous studies of spider poison are highly conflicting and confusing. We have repeated many of the reported experiments with *Latrodectus mactans*. Macerated suspensions of the spider failed to show any hemolytic power in vitro, and were without effect when injected. The bite of the spider, however, produced in young white rats severe symptoms often leading to death.

The black widow, so called from the custom of eating its mate, builds its coarse and irregular dark web in dimly lighted places where it may be undisturbed. Occasionally it is found under stones or pieces of wood, or in holes in the ground, in old stumps or in bushes, more often in the rafters and corners, under the floors and in the attics of little used frame houses, and in the dark corners of barns and other outbuildings, and it has been frequently seen in outdoor privies, where it often builds its web across the seat of the toilet. Although it is encountered mainly in the southern half of the United States, from the Atlantic to the Pacific coast, specimens have been reported also from such Northern states as New Hampshire, Pennsylvania and Ohio.

REVIEW OF ONE HUNDRED AND FIFTY CASES PREVIOUSLY REPORTED

More than two thirds of the reported cases of spider bite poisoning occurred in California, but cases were reported from more than a dozen other states. Most of the victims were males, and the majority were bitten on the penis or adjacent parts while sitting in an outdoor privy. The spider was caught and positively identified in only a dozen cases, but the description of it as a black spider, and the frequent mention of the red spot on the abdomen leaves little room for doubt of the species in most of the others. A stinging or sticking sensation was noted at the time of the bite, but this soon disappeared, and except for a tiny red spot sometimes reported, there was no mark or swelling to indicate the site of the bite. Acute pain, however, was present in some form in every case. It appeared in from a quarter to a half an hour, reached its acme in less than two hours, and persisted for more than six hours undiminished, then subsided in the course of a day or two, but did not disappear for several days, and was variously described as severe, intense, aching, agonizing, excruciating and paroxysmal. The pain spread from the region of the bite by contiguity; thus, the patients bitten on the penis generally had pain in the groin and then in the abdomen and back, while those bitten on the wrist had pain in the arm and chest before it reached the abdomen. The final distribution of the pain, however, was fairly uniform, wherever the initial lesion might be, being most often localized in the abdomen and legs,

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frequently also in the back, chest, groins and hips, and "all over," and less often in the arms, shoulders and head.

In addition to the acute pain, displayed in most cases by writhing, rolling, doubling up, muscle spasms and paroxysms, many other symptoms are enumerated, including, in the order of frequency, profuse cold perspiration, restlessness and anxiety, difficult breathing, nausea and anorexia, vomiting, constipation, cyanosis, delirium, prostration or shock, insomnia, disturbances of speech, acute urinary retention, paralyses, convulsions, localized swelling of the bitten part or other parts of the body, a macular skin eruption, chills, vertigo and jaundice. An extreme boardlike rigidity of the abdomen was the most striking physical finding, but abdominal tenderness was usually not mentioned. Tremors, muscle twitching and paresthesias were present in some cases, and priapism was occasionally observed. A slow pulse was noted in a number of cases, but a rapid one was just as common.

General weakness, numbness or tingling of the legs, or even actual bodily pains often remained throughout a long convalescence. Twelve deaths were reported; but only a few of them, as in the cases of Mr. Dick in North Carolina, Dr. Reese in Oklahoma, and Dr. Clark in California, have been described in detail. In the latter cases the symptoms appear to have been the usual ones, perhaps unusually severe, and death ensued in from fourteen to thirty-two hours.

Seldom in medicine will one find a greater diversity of treatment than in the recorded cases of spider bites. More than seventy-five different remedies have been administered for this condition, each with the greatest confidence that this was the line of treatment to give the patient the greatest benefit. The sheet anchors of therapy, however, have been morphine, whisky or brandy, ammonia water or spirit of ammonia, atropine, magnesium sulphate, hot baths and fomentations, enemas, bleeding, opium or laudanum, strychnine, camphor and potassium permanganate. Among other therapeutic measures administered were calomel, cantharides, catheterizations, castor oil, cocaine, arsenic, amber, antimony, acetylsalicylic acid, aconitine, belladonna, mercuric chloride, boneset, Dover's powders, Darby's fluid, echinacea, edgeweed, elaterium, glonoin, scopolamine, hoarhound, ipecac, lavender, mustard plasters, milk, magnesium phosphate, nitroglycerin, olive oil, potassium acetate, iodide and carbonate, phenol (carbolic acid), plantain, rue, quinine, sinapisms, spirits of turpentine, squirrel's ear, senna, sodium chloride, tansy, antimony and potassium tartrate, tobacco poultice, valerian, volatile liniment and Wizard Oil.

FIFTEEN ADDITIONAL CASES

The fifteen patients suffering from spider bite treated at the Los Angeles General Hospital were all males, ranging from 2 to 65 years of age. Most of the bites occurred after dark, in the late summer and early fall. Two thirds of the patients were bitten on the penis while sitting in an outdoor toilet. One or two tiny red spots were seen at the site of the bite in half of the cases, but these soon disappeared, and in no case was any swelling or inflammatory reaction manifested. Pain was in each instance the chief complaint, arising almost immediately in most cases and reaching its greatest severity in from one to two hours. It began to subside in from four to eight hours, but the severe symptoms were present for from twelve to twenty-four hours, and complete relief was not achieved for several days. The pain was described as acute, severe, continuous, cramping, throbbing or aching, sometimes sharp and sometimes dull, and was localized in the abdomen and legs in nearly all cases, but was also felt in the chest, arms, penis, groins, back and "all over" in many. Profuse perspiration, restlessness, nausea and vomiting, constipation, and rapid or difficult breathing were the chief symptoms noted, but vertigo, ataxia, chills, acute urinary retention, localized edema in the face or in the feet, and persistent hiccup were also recorded. On admission, the patients were writhing, tossing or moaning in the agony of pain. The abdomen was tense, with an extreme boardlike rigidity, but abdominal tenderness was noted in only three cases. The reflexes were increased in half the cases examined, especially the knee jerk, and tremors and muscle twitching were often present. Priapism was also noted.

Initial subnormal temperature followed by a mild fever was an almost constant feature in these cases, but in only one case did the temperature exceed 101 F. The pulse was generally slow as compared with the temperature, being below 66 in more than half of the patients at some time during their first days in the hospital. The respiration, however, was usually slightly accelerated on admission, but soon came down to a normal rate. The blood pressure was always elevated, averaging 150 mm. of mercury systolic with 87 mm. diastolic, but dropped rapidly on later readings. Leukocytosis was present in almost every case, averaging 14,800 in the cases examined on the first day in the hospital, the highest count being 21,800, but dropping to an average of 10,700 in the cases examined several days later, the lowest being 5,900. There was generally a relative polymorphonuclear leukocytosis, averaging 80 per cent in the cases recorded. The red blood count was variable, being often above normal, and the color index when calculated was about 1. Four of the patients in this series had positive Wassermann reactions. A trace of albumin and a few hyaline or granular casts were found in the urine in six cases, and blood was found in the urine in one. Almost all of the patients had obstinate constipation, causing them to go one or two days without a bowel movement while in the hospital, and two developed acute urinary retention, requiring catheterization.

TREATMENT

The treatment at the General Hospital has consisted mainly of (1) sedatives, such as morphine or codeine, which had to be given in larger doses than usual to secure results, bromides, chloral, barbital and hot applications; (2) stimulants, such as aromatic spirit of ammonia, caffeine and strychnine, and (3) eliminative measures, such as purgation with magnesium citrate or sulphate, castor oil or calomel, enemas, catheterization and gastric lavage.

Little is known about antibody formation to spider venom, but the experiments of Baerg and others indicate that one bite confers a degree of immunity, and so it was suggested that some form of specific serum treatment be attempted. Accordingly, 20 cc. of blood was taken from a patient who had recovered from a severe poisonous spider bite and injected intramuscularly into a man who had just entered the hospital in the agony of pain from a spider bite. Since he improved following the injection, the same procedure has been followed in three other cases since then, and in each instance relief was experienced in a much shorter time than would have been expected without such treatment. This was especially noted in the cases treated within a

few hours after the bite was received. The results, while not conclusive, are sufficiently encouraging to warrant the continuation of the use of convalescent serum in every case that is admitted following a poisonous spider bite, and a supply of convalescent serum is now kept at the hospital for this purpose.

CONCLUSION

Arachnidism, or spider bite poisoning, presents a clinical entity so striking that the diagnosis should easily be made, once the possibility is considered. One hundred and fifty cases have previously been reported in the United States, and fifteen cases have been seen at the Los Angeles General Hospital; but undoubtedly many more cases occur and may even pass unrecognized. Constant findings in this condition are a history of a bite by a black spider, followed by excruciating pain, mainly in the legs and abdomen, extreme abdominal rigidity, high blood pressure, elevation of temperature and a polymorphonuclear leukocytosis. Large doses of opiates and the application of heat are our main symptomatic remedies, but convalescent serum seems to be of specific therapeutic value.

LOCAL ANESTHESIA IN THE REDUCTION OF FRACTURES *

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Since 1885, when Conway [1] first advocated the use of cocaine in the reduction of fractures and dislocations, the only reference to the subject in American medical writings is an article by Cumston,[2] in 1918. Conway reported three cases of Colles' fractures and one of posterior dislocation of both bones at the elbow reduced under local anesthesia. The European literature contains series of cases reported by various authors. Reclus,[3] in 1903, made use of the method to transport in comfort a patient with a fracture of the femur, and found that a half hour later the anesthesia was sufficient to allow of the reduction of the fracture. Lerda [4] reported thirty cases in 1907, and the following year Quenu [5] described its use in fifteen cases. Braun [6] detailed fifty cases in which he used local infiltration twenty-three times and either brachial or other forms of conduction anesthesia in the remainder. Both Dollinger [7] and Hagenbach [8] prefer conduction anesthesia by circular infiltration proximal to the site of fracture. Fulton,[9] a British surgeon, reported five cases in 1921. The most recent writer on the subject is Frostell,[10] who, in 1925, advocated the use of the method without giving any details. The method is described by Baun and by Hertzler in their books on local anesthesia, and is mentioned by Allen.

Since 1924, I have used local anesthesia in the reduction of fractures. The method employed has been one of local infiltration at the site of the break. It is obvious that anesthesia can be induced by spinal injection for the lower extremity, or by nerve block of the brachial plexus in the upper extremity. The possible dangers of these procedures outweigh any advantage gained over the use of a general anesthetic. In lesions of the phalanges, nerve block of the digital nerves may be used.

METHOD

Procaine solution, from 0.5 to 1 per cent strength, with epinephrine, is used. When it is obvious that a large amount of the solution will be needed, as in the thigh, the lesser strength is chosen. The site of the injection is over the seat of the fracture. Every effort is made to select a spot where the skin appears normal, and to avoid injecting through or into plainly devitalized tissues. A needle of sufficient length to reach the bone is required. The solution is injected between the fragments and about them, as well as into the surrounding muscles. It may be possible at times to complete the infiltration through one puncture, the needle being moved about in the tissues and left in situ while the syringe is refilled. Where there is considerable overriding of the fragments, it may be necessary to inject separately over each bone end. When two bones are broken, as in the leg and the forearm, two separate punctures are needed; and two punctures were found to be convenient in Colles' fractures and in fractures of the femur. The amount of the solution used has varied from 20 to 150 cc.; the latter amount was used in a fracture of the femur in a muscular man. It will be noted in some cases that, when the needle point lies between the bone fragments, blood will rise in the syringe from the site of the fracture. The color is lighter than that which would be obtained if the needle were in a vein. Further differentiation can be made by inserting or withdrawing the needle a short distance; if it is a vein, the blood will cease to well up, but the amount extravasated about the site of a fracture is usually sufficient to continue rising in the syringe.

INDICATIONS

Whenever a local anesthetic is the choice for a major surgical procedure, its use would be indicated in the treatment of fractures. Under such a heading would come the aged, and the patient with a decompensated heart or with pulmonary or renal disease. As an example:

A woman was referred to me because of an impacted Colles' fracture. She had been under treatment for many years for hypertension, and a general anesthetic was contraindicated. An attempt at her home to correct the deformity without any anesthetic was unsuccessful. The following day, after the injection of 30 cc. of 0.5 per cent procaine, the fracture was reduced without any pain.

The majority of the fractures of the upper extremity are ambulant cases; they make up part of an office or outpatient rather than a hospital practice. It is in this type of fracture that local anesthesia will find its greatest field of usefulness, even though a general anesthetic is not contraindicated. In the following case a third indication can be seen:

A child, aged 8, admitted to the hospital with a fracture of the skull and of the femur, was in severe shock for twelve hours, and the fractured leg was treated with a temporary splint. The following day, after local infiltration with procaine, the fracture was painlessly handled, and the possible dangers of a general anesthetic were avoided.

A fourth indication will be found in the following report:

A woman, aged 60, came to the outpatient department complaining of pain in the shoulder following a fall the previous day. All attempts at examination were resisted by the patient,

* The majority of the reported cases are from the hospital or outpatient service of Dr. Elsberg at the Mount Sinai Hospital.

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2. Cumston, C. G.: Internat. Clin. **4**: 213, 1918.
3. Reclus: L'anesthésie localisée par la cocaine, Paris, 1903, p. 266.
4. Lerda, G.: Ztschr. f. Chir. **34**: 1417, 1907.
5. Quenu, E.: Bull. et. mém. Soc. de chir. **34**: 976, 1908.
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7. Dollinger, B.: Ztschr. f. Chir. **40**: 763, 1913.
8. Hagenbach, E.: Schweiz. med. Wchnschr. **51**: 483 (May 26) 1921.
9. Fulton, R. A. H.: Brit. M. J. **2**: 796 (Nov. 12) 1921.
10. Frostell, G.: Ztschr. f. Chir. **52**: 1308, 1925.

who cried out at the slightest touch. After the injection of 10 cc. of 1 per cent and 10 cc. of 0.5 per cent procaine in the region of the head of the humerus, a satisfactory examination was made. The patient had a fracture of the greater tuberosity.

A use of the procedure suggests itself, although I have not had occasion to employ it. A fracture could be anesthetized in the operating room, and the patient go a distance to the roentgen-ray department for reduction of the fracture under the fluoroscope. This would be preferable to the transportation of an unconscious patient or to the administration of a general anesthetic in the roentgen-ray department. The only occasion I have had to use local anesthesia in a dislocation was that of a muscular man seen in the accident ward of the hospital. The intern in charge had been unable to reduce a dislocated phalanx. I failed on my first attempt, but succeeded readily after blocking the digital nerves.

CONTRAINDICATIONS

The one true contraindication to the use of local injection at the site of fracture is a compound fracture. If it is badly compounded and soiled, local infiltration may well spread infection into the surrounding tissues. Even in cases which do not seem in need of operative intervention, infection may be present to show itself several days later. Until the use of local anesthesia is more common in the treatment of fractures, one would not care to have a suspicion arise that its use was a possible factor in the infection. Circular injections, well removed from the site of the lesion, could be used in this type of case. Objection may be raised to the local infiltration on the grounds that we are converting a simple into an open fracture and thus invite infection. With proper asepsis, I believe this objection is theoretical. I have not seen even the suggestion of any reaction from its use, and none has been reported by others in large series of cases. A second possible objection that may be raised is that proper muscular relaxation will not be obtained. I thought this was probably correct until I used the method in a young negro porter of powerful build, who had a fracture of the femur at the junction of the upper and the middle third. A reduction was readily carried out on a fracture table after the injection of 150 cc. of 0.5 per cent procaine. The only complaint of the patient was the pressure from the perineal bar. A third point which might be raised against the use of local anesthesia is the impracticability of using it in children. I have successfully used it in three children under 10 years of age, and feel that by gaining the confidence of the patient it can be used at any age. By freezing the skin, the first puncture can be made painless. This puncture and, at times, a feeling of tenseness of the tissues have been the only complaints.

Local anesthesia has been successfully used in the following thirteen cases: fracture of the shaft of the femur, 2; fracture of the shaft of the humerus, 1; fracture of the tuberosity of the humerus, 1; fracture of the clavicle, 1; fracture of both bones of the forearm, 1; fracture at the wrist, 3; old fracture of the carpus (refractured), 1; fracture of the tibia, 1; fracture of the tibia and fibula, 1, and dislocation of the phalanx, 1. This group, while not extensive, is fairly representative of the various types of fractures. A satisfactory anesthesia was obtained in every instance.

CONCLUSIONS

1. The induction of anesthesia in fractures by local infiltration is a practical procedure.
2. It is useful in patients in whom a general anesthetic is contraindicated, and is particularly recommended for the treatment of ambulant fractures.

4 East Ninety-Fifth Street.

A METHOD OF STRIPPING THE SEMINAL VESICLE

REPORT OF TWO HUNDRED CASES OF CHRONIC SEMINAL VESICULITIS

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Chronic seminal vesiculitis is characterized by a symptomatology that is somewhat underemphasized and often unrecognized.[1] For the sake of calling attention to the more important features, let us recall that there is very often pain in the lumbosacral region [2] or perineum, and down the legs or in the knees; the patient is often underweight, with sagging muscles and skin pallor, and has a constant sense of fatigue or tires easily. He has lowered vitality and mental depression. The rapidity with which the pain disappears with increase in weight back to normal, with which there occurs a good color return to the skin, and a general sense of well being, with increased vitality and subsidence of all other distressing symptoms after a few, from three to six, thorough massagings and strippings of the seminal vesicles, is remarkably striking.

Undoubtedly the seminal vesicle, which is a hollow organ, plays as important a rôle in harboring infection as the prostate,[3] if not more so; and, since it represents an important unit in the channel that conveys the very germinal cell of human life, this is all the more reason for keeping it free from pollution. Almost any one can reach up into the rectum and push on the readily felt prostate; but, unless one has a clear conception of the anatomic relationships of this region and the importance of the seminal vesicle in infections of the genital tract, one is apt to fail in getting a specimen of pus where plenty exists, to say nothing of the consequent failure to give relief by the expulsion of masses of pus therefrom that can be accomplished if the proper manipulation is employed in stripping them.

The seminal vesicles are reported to be from 4 to 5 cm. in length (Piersol); "sometimes much longer and relatively slender and at others short and broad, they vary greatly in size and in detail of arrangement of their component parts, and not infrequently are markedly asymmetrical." They are sacculated and tortuous, and while their position is relatively fixed they assume great variations of angulation from the midline of the rectum. As they are lateral and above the prostate, and since the average forefinger of a man reaches not far above the upper border of the prostate, and as the patient usually experiences much tenderness in this region, relaxing reluctantly, it is not surprising that it

1. Nielsen, J. M.: Retroperitoneal Pelvic Abscess in the Male, J. A. M. A. **86**: 683 (March 6) 1926. Wesson, M. B.: Industrial Hernia Versus Seminal Vesiculitis and Vasitis, California & West. Med. **24**: 212 (Feb.) 1926.
2. Player, L. P.: The Prostate and Its Influence on Low Back Pain, California & West. Med. **23**: 993 (Aug.) 1925.
3. Boyd, M. L.: Method of Examining Secretions from Prostate, Seminal Vesicles and Ampulla of the Vasa, J. A. M. A. **82**: 792 (March 8) 1924. Dillon, J. R.: Tuberculosis of the Seminal Tract, California & West. Med. **23**: 1139 (Sept.) 1925.

is often difficult to empty these organs efficaciously by maneuvers of the surgeon's finger in the patient's rectum.

METHOD OF STRIPPING

To examine properly and to strip a seminal vesicle the patient should be relaxed, and the urologist should be able to explore the male pelvis with his finger as thoroughly as the gynecologist explores that of the female. It can be done with a little anesthesia for the patient and with a willingness to push on the part of the searching fingers.

The method I have adopted is to cleanse the penis with tincture of green soap, wash the parts with mercuric chloride solution, wash out the urethra with boric acid solution, and then instill 10 cc. of sterile 1 per cent butyn through the urethra, up past the external sphincter into the prostatic urethra with an ordinary sterile urethral syringe. This is massaged well into this region by rubbing it along the urethra and perineum, and then a rectal suppository containing 2 grains (0.13 Gm.) of butyn is inserted into the rectum A few minutes are allowed to obtain good anesthesia, after which we find that the rectal muscles are usually well relaxed.

The patient is placed in the position most desired by the surgeon for massaging the glands (we prefer either the standing position with good flexion at the hips, or the knee-chest position on the examining table), and with the forefinger covered with a cot one finds that the finger can be pushed well up into the pelvis beyond the prostate; and, swinging over to one side, one usually has no difficulty in finding the seminal vesicle. Beginning as high as possible, the finger is brought down along this organ firmly with a rapid stroke, which is repeated in a series of rapid strokes with a milking motion for several seconds. Then, if any areas of induration are felt, a steady, firm continuous pressure downward is made on each of these for a few seconds. The same procedure is applied to the vesicle on the other side, and then the prostate is massaged in the customary manner. If there are any coagulated agglutinated masses of pus and detritus in these organs, they are brought down into the prostatic urethra where they lie, too heavy to pass through it until washed out by an irrigation, and are seen if collected in a sediment glass often in sufficient quantity to settle in several inches thickness at the bottom of the glass.

Following the stripping and massage, the deep urethra is instilled with mercurochrome-220 soluble, as suggested by Young.[4] From three to twelve of these treatments usually free these organs of the most important masses of pus, and only the usual seminal and prostatic fluids remain, which most often now unfortunately show an excess of leukocytes for a persistently long period.

These manipulations should be done with much care; and although some firm and considerable pressure is sometimes necessary to expel the infected material, it should be done with all precautions possible, and with a thorough knowledge of the anatomy of this region, with due respect to the sacral plexus of nerves, the body of the seminal vesicle itself and the wall of the rectum, to avoid injury to any of these or other adjacent structures.

In considering the 200 cases of chronic seminal vesiculitis in which treatment was done in this manner, we found that all the patients gave histories of gonorrheal infection of from four months to many years' standing, with "morning drops," recurrences of acute exacerbations of freely flowing pus from the urethra, local irritations, epididimytis, and the usual array of manifestations characteristic of this affection. Eighty-five per cent of the patients manifested symptoms of backache, loss of weight, lowered vitality and depression in varying degrees, and 15 per cent were practically free from all these symptoms except the "morning drop" or some local irritation. Under our management, in practically all cases the pus was reduced to a mere trace before cessation of treatment, most of them presenting great masses of pus at first in the massage secretions; in all the cases there was relief from distressing symptoms, and in most cases an increase in weight of from 5 to 25 pounds (2.3 to 11.3 Kg.) in from four weeks to twelve months. Ten per cent of the patients were freed from all traces of pus in from ten weeks to twelve months, and were discharged subject to periodic reexaminations. About half of these have reported over a probationary period of many months and were found to have remained clean. Eighty per cent voluntarily ceased to appear for treatment before complete disappearance of the last trace of pus, a few of these returning later at periods of from six months to a year again to resume treatment, some presenting a freshly acquired acute anterior urethritis either from an extraneous source or from their own deeper structures, but most of them precisely where they left off, with only a trace of pus on massaging. Ten per cent are still under treatment.

No patient has suffered any ill effects from a series of rather vigorous stripping of the seminal vesicles and massagings of the prostate gland, aside from minor aches along the vas deferens for a few hours afterward; in a few, slight bleeding from the rectum occurred and some experienced a degree of pain during the treatment in spite of the anesthesia. Twenty per cent suffered transient and unalarming dizziness or went into complete syncope with blanching of the skin and profuse sweating immediately after the massage, from which they promptly recovered. I believe that the reaction of syncope here is not psychic, and offer as possible explanations of its cause that it is either a sudden flooding of the system with toxins liberated by the massage, or that it is purely an autonomic nerve reflex receiving its stimulus in the sympathetic nerves of the stripped organ and manifesting itself in the activity of the vasoconstrictors of the brain and skin.

CONCLUSIONS

From a study of these cases, I feel that the importance of chronic seminal vesiculitis, and particularly in gonorrhea, has been underestimated; that the symptoms of this affection are underemphasized, as well as the readiness to which they respond with proper treatment; that with the help of even a mild anesthesia the parts become relaxed and treatment facilitated; that a quick, rapidly repeated milking motion applied to these vesicles is advantageous in emptying them; that careful strippings deliver the vesicles of masses of agglutinated pus, often hard and lumpy, which might otherwise never become dislodged, and that the phenomenon of syncope occurs in many cases immediately after a massage, particularly the initial one.

316 Judge Building.

4. Young, H. H.: The Problem of Sterilizing the Urinary Tract, J. Urol. **15**: 11 (Jan.) 1926.

Child Labor.—Children . . . play an important part in the production of tobacco in the United States, two disagreeable operations in its cultivation being considered in some areas distinctly children's work.—U. S. Department of Labor.

CHOLECYSTOGRAPHY: THE USE OF PHENOLTETRAIODOPHTHALEIN *

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In previous publications we [1] stated that observations were being made to determine whether or not phenoltetraiodophthalein would prove to have superior advantages over tetraiodophenolphthalein for purposes of cholecystography. It will be recalled that these two substances are isomeric compounds differing from each other in the location of the iodine atoms in the molecule. Phenoltetraiodophthalein also is characterized by its ability to stain the serum sufficiently to make it of use in determinations of hepatic function, for which purpose it has the same possibilities as phenoltetrachlorphthalein.

We have now given the sodium salt of phenoltetraiodophthalein intravenously to fifty patients. For purposes of intravenous use in cholecystography it seems to possess very decided advantages over anything else hitherto employed. Satisfactory shadows of the gallbladder can be obtained with smaller doses than with the isomeric compound, tetraiodophenolphthalein. Its use, therefore, is followed by fewer and much less severe toxic reactions, although within the last year these have been negligible with the tetraiodophenolphthalein. The toxicity of this whole group of substances seems to be due chiefly to the phenolphthalein part of the molecule, as judged by the fact that toxic effects can be produced by injections of phenolphthalein alone which are apparently identical with those produced by the halogenated phenolphthaleins. As an average intravenous dose, we have used the phenoltetraiodophthalein in amounts of 0.04 Gm. per kilogram. We have used amounts up to 2.5 Gm. for adults. We have not found it necessary to exceed that amount in any case, although it is conceivable that unusually large persons might require larger doses than this. For the sake of convenience we ordinarily give it in one dose dissolved in 30 cc. of freshly distilled water. In this way it may be given easily with a syringe. But if larger dilutions are desired it may be given by the gravity method. In the fifty cases there were three instances of slight dizziness of no more than ten minutes' duration. In the other cases there was no reaction of any kind. The fact that it gives satisfactory results in relatively small doses makes it possible also to make the injection all at one time without the same fear of toxic reactions as is the case if the larger dose of tetraiodophenolphthalein is given at one time. Likewise the danger of thrombophlebitis is reduced, and we have had no instances of this in our series of fifty cases. A final advantage lies in the fact that this substance seems to be more rapidly excreted through the liver, and accordingly the time necessary for a cholecystographic examination can therefore be shortened. Excellent shadows of the gallbladder may usually be obtained in four hours after the injection of the phenoltetraiodophthalein. The interpretation of cholecystograms produced by phenoltetraiodophthalein is the same as we originally described for the halogenated phenolphthaleins.

We have had only indifferent success with this substance when administered orally. In our experience the method of intravenous injection continues to give a diagnostic accuracy of 97 per cent, as compared with an accuracy of only about 75 per cent with the method of oral administration.

The hope expressed previously that, since it colors the urine, it might be used for studying the renal function seems not to be borne out by later work, for the reason that only about 3 per cent of the dye is excreted in the urine even with normal conditions.

The decided advantages possessed by phenoltetraiodophthalein over tetraiodophenolphthalein for purposes of cholecystography have caused us to substitute the former for the latter in routine use in the Barnes Hospital.

Since sending this manuscript to press we have found still another substance which gives excellent cholecystograms. This is the sodium salt of tetraiodoisophenolphthalein. Preliminary experiments indicate a marked absence of toxic effects, but we have not yet used it sufficiently to know whether it possesses any advantages over phenoltetraiodophthalein.

* This work was aided by a grant from Edward Mallinckrodt, Jr.

* From the Department of Surgery, Washington University School of Medicine and Barnes Hospital.

1. Graham, E. A.; Cole, W. H.; Moore, Sherwood; and Copher, G. H.: Cholecystography: Oral Administration of Sodium Tetraiodophenolphthalein, J. A. M. A. **85**: 953-955 (Sept. 26) 1925. Graham, E. A.; Cole, W. H.; Copher, G. H., and Moore, Sherwood: Simultaneous Cholecystography and Tests of Hepatic and Renal Functions, ibid. **86**: 467-468 (Feb. 13) 1926. Graham, E. A.: Gallbladder Diagnosis from the Standpoint of the Surgeon, Radiology **6**: 273-278 (April) 1926.

EXPERIENCE WITH CHOLECYSTOGRAPHY IN CASES COMING TO OPERATION *

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Since the introduction of cholecystography by Graham and Cole of St. Louis, numerous articles have appeared paying tribute to it as a measure of great value in the diagnosis of gallbladder disease. There have been, however, relatively few reports of series of consecutive cases coming to operation in which the cholecystographic diagnoses have been correlated with the findings at the operating table and in the pathologic laboratory. On this account, it has seemed to us that it might be of some value to present these correlations for our patients who have been operated on, and to tabulate, so far as it seems feasible, the similar reports found in the literature.

It is perhaps advisable to preface the presentation of our own cases by a brief summary of the technic and point of view in interpretation that we have followed, although these have been copied in all essential features from the work of others. Our joint experience with the test began about six months ago, when sodium tetra-iodophenolphthalein was coming into general use. This salt has been employed exclusively. The technic has varied somewhat, but the routine has been to give 3.5 Gm. of the salt between 8 and 9 o'clock in the evening, well after the usual evening meal, and to make the initial roentgenologic examination on the following morning, approximately twelve hours later. These hours of administration and examination were chosen because they fitted best with other hospital work. The intravenous route for administering the

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dye was generally used because it has seemed the most accurate, and we have not been impressed by there being any particular inconvenience or hazard in it. Some of the patients were allowed a small amount of food in the morning before appearing for the first roentgen-ray examination; this seemed to have no appreciable effect on the practical worth of the test, although it was undoubtedly an unwise digression from the generally accepted procedure.

In viewing the roentgenograms, we have endeavored in each case to make one of three diagnoses; namely, cholelithiasis, a pathologic biliary tract, or a normal biliary tract. The chief criteria used to differentiate these have been: (1) the presence of shadows regarded as representing calculi, and (2) the degree of visualization of the gallbladder. A diagnosis of cholelithiasis has been made whenever the control films or the cholecystograms or both showed shadows of increased density that looked like calculi, and when in the cholecystograms a visualized gallbladder presented shadows of diminished density that had a similar resemblance. The fact that stones are frequently revealed in the latter fashion in gallbladders that seem otherwise to respond quite normally to the dye makes it unwarranted, in our opinion, to infer from this test alone that there is in such cases any other pathologic condition than the stones present; hence, the distinction has been made in the roentgenologic interpretation between cholelithiasis and a pathologic biliary tract. The diagnosis of pathologic biliary tract has been applied to those cases in which there was no visualization of the gallbladder and to those in which this visualization was indistinct; in several of these, calculi were found at operation, but neither the control roentgenograms nor the cholecystograms afforded any definite evidence of their existence. A clear cut visualization of the gallbladder by the dye has been regarded as implying a normal biliary tract. Since cholecystography should probably be considered as primarily a measure of gallbladder function, it is to be expected, as with any functional test, that there will be all degrees of response to it; and while such graduated variations undoubtedly occur, in our limited experience there have been practically no cases that seemed in the midzone between normal and pathologic so far as visualization was concerned; almost without exception, they have appeared definitely one or the other.

Table 1 shows the twenty-six cases that we have had in which the test was employed and operation performed; three cases in which oral administration alone was tried are not included, because faulty vehicles prevented the absorption of the dye, and therefore no diagnostic opinion could be expressed. The control films of the gallbladder region were taken ordinarily from twelve to thirty-six hours before the giving of the dye; a naught in this column signifies that nothing suggestive of stones or gallbladder was seen. Under cholecystograms, the demonstration of stones is indicated by a plus sign or number in the column headed stones. The findings on the films taken twelve hours after the administration of the dye are the only ones tabulated; in this column, a plus sign indicates good visualization of the gallbladder, and a naught indicates total lack of visualization; a faulty visualization is so stated. In listing the cholecystographic diagnoses, normal and pathologic are used instead of the expressions normal biliary tract and pathologic biliary tract. The surgical findings were taken from the operative notes, and the pathologic findings from the laboratory reports.

In five of these twenty-six cases, a diagnosis of cholelithiasis was made by cholecystography, and stones were found in each at operation. Of thirteen cases diagnosed as pathologic biliary tract, eleven showed gross evidence of disease, eight patients having stones, two presenting definite pictures of chronic cholecystitis, and one having what was presumed to be a carcinoma

TABLE 1.—*Data of Cholecystographies in Authors' Cases*

Case	Control Films	Cholecystograms: Stones*	Cholecystograms: 12 Hours†	Cholecystograms: Later	Diagnosis from Cholecystograms	Diagnosis at Operation	Diagnosis from Pathologic Specimens
				Intravenous Administration			
1	Stones	+	+	.....	Cholelithiasis	Gallstones.....	Stones; slight chronic cholecystitis
2	None	0	+	.....	Normal	Normal gallbladder.....	No specimen
3	0	0	0	.....	Pathologic	Carcinoma of ampulla of Vater; common duct obstructed	No specimen
4	0	0	Faint	+ at 24 hours	Normal	Normal gallbladder.....	No specimen
5	0	0	+	.....	Normal	Normal gallbladder.....	No specimen
6	0	0	+	.....	Normal	Normal gallbladder.....	No specimen
7	0	0	0	.....	Pathologic	Gallstones.....	Stones; slight chronic cholecystitis
8	0	0	Faint	+ at 36 hours	Normal	Normal gallbladder.....	No specimen
9	0	0	0	.....	Pathologic	Many small stones.....	Stones; slight chronic cholecystitis
10	Gallbladder visualized?	0	As control	.....	Pathologic	Normal gallbladder.....	Mild chronic cholecystitis
11	0	+	+	.....	Cholelithiasis	One large gallstone.....	Stones; slight chronic cholecystitis
12	0	+	0	.....	Cholelithiasis	Gallstones; chronic cholecystitis..	Stones; chronic cholecystitis
13	0	0	0	.....	Pathologic	Adhesions; chronic cholecystitis...	Chronic cholecystitis
14	0	0	+	.....	Normal	Normal gallbladder.....	No specimen
15	2 stones	4	+	.....	Cholelithiasis	Two large stones; cholecystitis....	Four stones; chronic cholecystitis
16	0	0	0	.....	Pathologic	Gallstones; chronic cholecystitis..	Stones; chronic cholecystitis
17	0	0	0	.....	Pathologic	Gallstones; chronic cholecystitis..	Stones; chronic cholecystitis
18	0	0	0	Faint at 18 hours	Pathologic	Hepatitis; cholangeitis.....	Many bacteria in bile
19	0	0	+	.....	Normal	Adhesions; chronic cholecystitis...	Pericholecystitis; gallbladder normal
20	0	0	0	.....	Pathologic	Gallstones.....	No specimen
21	0	0	0	.....	Pathologic	Gallstones; chronic cholecystitis..	Stones; marked chronic cholecystitis
22	0	0	0	.....	Pathologic	Adhesions.....	Chronic cholecystitis
23	0	0	0	.....	Pathologic	Stones; cystic duct blocked.....	Chronic cholecystitis
24	0	0	+	.....	Normal	Normal gallbladder.....	No specimen
				Oral Administration in Cases with Intravenous Administration			
3	0	0	0	.....	Pathologic		
12	0	+	0	.....	Cholelithiasis		
				Oral Administration Alone			
25	None	+	+	.....	Cholelithiasis	Gallstones.....	No specimen
26	0	0	0	.....	Pathologic	Gallstones.....	Stones; chronic cholecystitis

* In this column, plus signifies stone shadows present; 0, no stone shadows.
† In this column, plus signifies normal visualization of gallbladder; 0, no gallbladder shadow seen.

of the ampulla of Vater that was obstructing the common bile duct. In one case in which a laparotomy had already revealed an acute hepatitis and cholangeitis with a bacteria-laden bile, the test was performed two weeks after the operation, and although the status of the biliary apparatus at the time the examination was made is not known, it seems to us reasonable to suppose that there was a pathologic condition then present sufficient to support the impression of disease given by the cholecystograms. In only one case in which the diagnosis of pathologic biliary tract was made did the operation fail to disclose gross evidence of disease, and in this case, although the surgeon considered the gallbladder normal, it was removed and from microscopic examination was adjudged by the pathologist to be the seat of a "mild chronic cholecystitis." In the eight cases interpreted as normal by cholecystography, seven were considered so at operation and the gallbladders were not removed. It is possible that a pathologic examination would have yielded evidence of disease in some of these. The eighth case showed adhesions about the gallbladder; the surgeon, thinking it diseased, removed it, but inspection of its interior and microscopic examination of its walls supplied no evidence of abnormality.

In a few cases we have endeavored to obtain gallbladder shadows following the oral administration of bromides, as suggested by Sabatini and Milani,[1] but without success; rather dense shadows of the urinary bladder were, however, secured.

Thus, of these twenty-six cases in which operation was performed, the cholecystographic diagnosis failed of confirmation in only one, and in it the findings were somewhat equivocal. This gives a diagnostic accuracy of 96 per cent for the method as evaluated by surgical and pathologic examination.

Table 2 is an attempt to assemble the cases recorded in the literature in which the findings by cholecystography have been compared with the findings at operation. In arranging these cases under the headings chosen, some liberty has been exercised on our part and some mistakes have probably been made in doing so. Of the 212 cases examined with intravenous administration of the dye, the diagnoses made from the cholecystograms were substantiated at operation in 91 per cent; in the cases with oral administration, the confirmation was somewhat lower but was nevertheless more than 80 per cent. In the number regarded as errors there have been included some which were doubtfully so, and probably a few of the early cases with later technic and interpretation would not have been thus classed. Variations in different clinics have depended presumably in large measure on the differences in types of patients submitted to examination, and on difference in points of view of surgeons, roentgenologists and pathologists; thus, the results are scarcely comparable except in indicating a general agreement on the high diagnostic value of the method.

TABLE 2.—*Comparison of Findings at Cholecystography and Those at Operation*

Author	Cases	Cholecystogram Findings: Stones	Visualization: None	Visualization: Faulty	Visualization: Good	Diagnosis: Diseased	Diagnosis: Normal	Operative and Pathologic Findings: Stones	Pathologic Change: Gross	Pathologic Change: Slight	Normal	Comment
Intravenous Administration												
Sosman, Whitaker and Edson: Am. J. Roentgenol. 14: 495 (Dec.) 1925	43	17	14	7	5	38	5	27	10	0	6	One reported normal and found diseased; two with faint shadows reported pathologic and found normal; slight and gross disease not distinguished
Carman: Lancet 2: 67 (July 11) 1925	50	4	22	5	9	41	9	28	19	3	0	Nine with normal cholecystograms showed some pathologic changes, two containing stones
Cohen and Roberts: Brit. M. J. 2: 54 (July 11) 1925	10	..	6	2	2	7	3	5	2	0	3	One diagnosed pathologic and found normal; one case regarded as doubtful showed a calculus
Winslow and Melgard: Northwest Med. 24: 124 (March) 1925	7	2	3	1	1	6	1	4	2	0	1	
Nemours-Auguste: Bull. et mém. Soc. de radiol. méd. de Paris 119: 123 (May 12) 1925	8	..	..	..	..	5	3	3	2	0	3	
Kaznelson and Reimann: Klin. Wchnschr. 4: 1309 (July 16) 1925	4	..	2	1	1	..	..	2	0	1	1	
McCoy and Graham.....	24	4	12	0	8	16	8	11	4	1	8	One case diagnosed pathologic showed only minor microscopic changes
Moore: Am. J. Roentgenol. 13: 515 (June) 1925	53	..	..	..	..	48	5	..	41	..	9	Four reported pathologic and found normal; technical faults suspected in two of these; Graham, Cole and Copher later reported 96.25 per cent diagnostic accuracy in 80 cases from this clinic
Einhorn, Stewart and Ryan: M. J. & Rec. 122: 77 (July 15) 1925	13	..	..	..	..	..	..	..	..	..	..	Diagnosis not corroborated in one case; dye given intraduodenally in one case
Oral Administration												
Carman: Lancet 209: 67 (July 11) 1925	143	15	62	26	39	103	39	71	32	19	21	Ten with definite disease and eleven with slight pathologic change gave normal cholecystograms; five of former had stones. Three normals gave no shadow
Sosman, Whitaker and Edson: Am. J. Roentgenol. 14: 495 (Dec.) 1925	31	..	..	..	..	..	..	..	..	..	..	One case not confirmed at operation
Oakman: Am. J. Roentgenol. 14: 105 (Aug) 1925	7	..	..	..	..	..	..	..	..	..	..	One case not confirmed at operation
McCoy and Graham.....	2	1	1	0	0	2	0	2	..	..	0	
Graham, Cole and Copher: Am. J. Roentgenol. 14: 487 (Dec.) 1925	7	..	..	..	..	..	..	..	..	..	..	Accuracy about 80 per cent

1. Sabatini, G., and Milani, E.: Visibilite radiologique de la vesicule biliare apres administration "per os" de bromures alcalins, Presse méd. 33: 1160 (Aug. 29) 1925.

SUMMARY

1. In twenty-six consecutive cases in which operation was done in this clinic, the cholecystographic diagnoses were confirmed at operation in 96 per cent.

2. In 212 cases collected from the literature, with intravenous administration of the dye, the cholecystographic diagnoses were confirmed in 91 per cent. In cases with oral administration of the dye, the confirmation was more than 80 per cent.

3. The accuracy of cholecystography in predicting gallbladder disease merits its wide use as a procedure in diagnosis.

THE PRECLINICAL STAGE OF HEART DISEASE *

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On first thought it may seem that an attempt to establish a preclinical stage of heart disease is a refinement in diagnosis attainable only by a select few. Such is not the case. Sufficient evidence has accumulated since the days when hearts were, for the most part, studied at the bedside to show that organic heart defect is usually the result of several successive phases of development, quite comparable to the germinating grain of corn that evolves the blade, the stalk and eventually the ripened ear. Chronic myocarditis—for which a more appropriate name would often be progressive heart muscle inefficiency—is generally the ultimate end-result of accumulated heart protests which, at their inception, we once were wont to wave aside with a gesture of inconsequence.

EARLY SYMPTOMS MORE CONSTANT THAN EARLY SIGNS

Heart protests, in the beginning, are nearly always subjective symptoms alone, and the symptoms need not at all be confined to the left chest. Physical findings at this stage may be expected to be absent. The heart is found either normal or else not sufficiently disturbed in function as yet to yield the familiar group of signs on which a diagnosis of heart disease can be classically constructed. When heart defects attain the coarse proportions of persistent and transmitted murmurs, profound heart enlargement, grossly irregular pulse, congestions, edema, anasarca and physical prostration—except in those comparatively rare cases in which an acute illness acutely involves the heart—there is little that can then be done for either heart or patient. Such signs as these announce the approaching end of life.

The aim in this age of conservation, the fundamental purpose of periodic health examinations, is to anticipate and, by the correction of underlying faults and defects, to avoid such cardiocirculatory catastrophes as "typical heart disease." This can be accomplished by the early recognition of early heart protests.

PRECLINICAL SYMPTOMS OF HEART AFFECTIONS

The preclinical stage of heart embarrassment can be reduced to five symptoms, of any one or more of which the patient will complain. These five symptoms include shortness of breath, heart hurry, chest oppression, chest pain and physical fatigue, all attendant on moderate or accustomed effort. The presenting of such symptoms warrants the most assiduous search, both of the heart and elsewhere throughout the body, for the cause of these early heart protests.

* Prepared for the Committee on Periodic Health Examinations.

THE "ACUTE INDIGESTION" FALLACY

Patients frequently assert that the foregoing symptoms are relieved by belching, and that therefore the heart protests are due to "gas pressing on the heart." "Acute indigestion" is a favorite newspaper headline elaboration of the same idea, grasped to explain the sudden cardiac deaths of prominent men. "Indigestion" is the black beast of the cardiologist, and the most difficult of all obsessions of which to rid the patient, once he has evolved this satisfying concept. As medical men we know how unconsciously and with what ease one can eructate. The upper end of the stomach is not an air-tight structure to imprison gases that later by their accumulation forcibly explode. And even if the opening to the stomach by neuroses might contract, it would seem that distention of the gastric walls by gas would mechanically draw the distention apart.

So why permit this "gas pressure" delusion longer to encumber a patient's thoughts and lull him into a false sense of security? Surely it is more logical to assume that decomposition of food occurs because the heart is incapable of supplying the stomach with blood sufficient to elaborate digestive juices or motivate the stomach; or one might adopt the hypothesis that the heart is embarrassed reflexly by way of the pneumogastric nerve which supplies both stomach and heart. Whatever the underlying cause in a given case might be, it is a clinical fact that when a heart can be embarrassed by "gas pressure" there is usually something wrong with that heart.

PHYSICAL SIGNS OF THE PRECLINICAL HEART

There are physical signs that the physician may find within the heart itself, and others that are to be sought for elsewhere in the body, which may indicate a beginning heart affection. Among those to be found in the heart may first be mentioned the "extra beat" or intermittent pulse which, however long established in the apparently healthy, is always abnormal and always a sign of heart protest. Second in importance is some degree of heart enlargement in the transverse heart diameters, detected by percussion and determined by the roentgen ray. The sounds in such a heart may be sharp and clear before the exercise test, but muffled and indefinite following effort; or the reverse of this situation may prevail, especially in patients who at some time have been engaged in strenuous competitive athletics. The rate response of the heart to exercise, which usually in the normal returns within two minutes to the preexercise rate when sitting, may continue for a longer time to remain elevated from twenty to forty beats; or an affected heart may actually slow down in rate under an exercise test and not attain the previous rate until several minutes have elapsed.

Any one of these early heart signs—intermittent pulse, heart enlargement, auscultatory phenomena, rate response—is of sufficient importance to warrant some degree of heart care and intensive heart study.

EARLY PHYSICAL FINDINGS OUTSIDE THE HEART

First among the physical findings that may be encountered outside the heart is the occurrence of râles at the base of the left lung posteriorly, often an early and always a valuable sign of heart impairment unless otherwise explained. Anemia, thyroid enlargement, vasomotor disturbances, dizziness on sudden change of posture, all call for heart suspicion. Either overweight or malnutrition may tax the heart. Emotional upsets in the temperamentally placid or continued high tension in persons of neurotic tendencies may eventually establish

heart imbalance with resultant circulatory inefficiency. The "toxins of fatigue," from too intensive physical application or mental concentration, can certainly harass the heart.

APPLYING THE REMEDIES

When a physician conducting a periodic health examination has found symptoms or signs indicative of early heart involvement, he naturally next addresses his attention to the correction or removal of underlying causes. The search for such factors begins with evaluating the patient's previous history. It may be that a heart has been affected earlier in life by one of those diseases which is known to throw a heavy load on it, and that heart is no longer sufficient to support the circulation in the patient's present occupation, circumstances or at his present age. Habits may be faulty and need correction. The patient may require guidance in personal hygiene—in matters of diet, weight, exercise, rest or diversion. Some hidden constitutional disease may need to be sought and corrected to relieve the heart embarrassment.

In any and every instance of heart protest, regardless of other likely causative factors, the tonsils should be required to establish their right of occupancy in the throat, and this applies regardless of the age of the potential heart patient. Each tooth should prove its innocence by roentgen-ray study and by the clinical examination of a not too conservative dentist who is familiar with the relation existing between dental defects and organic involvement elsewhere in the body. Drugs that act directly on the heart are rarely if ever required in the preclinical stages of heart affections.

Through such inspections, considerations and methods as those here outlined, a physician may logically expect to appraise the preclinical stage of heart disease.

323 South Eighteenth Street.

DIABETIC COMA AND INSULIN

LEWIS FOX FRISSELL, M.D.
AND
JOSEPH HAJEK, M.D.
NEW YORK

Before Banting's discovery of insulin, diabetic coma was a serious condition to treat, both in the wards of the hospital and in private practice. Since the advent of insulin, the mortality has diminished to such an extent and with such rapidity that death caused by diabetic coma now appears as unnecessary.

In this article, an attempt is being made to show the difference in mortality before the discovery of insulin and since that time, with especial reference to diabetic coma. For this purpose, all diabetic patients admitted to the wards of St. Luke's Hospital during a period of four years are made subjects of study; they are divided into two groups, group 1 covering the preinsulin and group 2 the postinsulin years.

It will be noted that the first, or preinsulin, group covers the two years just prior to the discovery of insulin, and the second group covers the first two years after its discovery, beginning, however, with 1923; 1922 is intentionally omitted as a year in which the use of insulin was restricted by the supply.

GROUP 1

During the period 1920-1921, 113 patients with diabetes were admitted to St. Luke's Hospital—fifty males and sixty-three females. The medical division cared for 101 patients, and the surgical division treated twelve.

The medical service recorded eighteen deaths among the 101 patients treated, or a total mortality of 18 per cent. Diabetic coma was responsible for twelve of the eighteen deaths. In the remaining six cases, the immediate cause of death was due to other diseases than diabetes, leaving a mortality of 12 per cent due directly to diabetic coma.

Of the twelve patients treated in the surgical division, four died, a 33 per cent mortality, though none died in diabetic coma. Table 1 shows the mortality and the causes of death.

TABLE 1.—*Mortality in One Hundred and Thirteen Cases (Group 1, Fifty Males, Sixty-Three Females) of Diabetes in St. Luke's Hospital in 1920-1921*

Cases	Deaths	Mortality, per Cent	Cause of Death
Medical Service			
101	18	18	Diabetic coma, 12; lobar pneumonia, 1; cardiac failure, 2; renal disease with hypertension and cerebral hemorrhage, 2; cardiorenal disease, 1
Mortality due to diabetic coma, 12 per cent			
Surgical Service			
12	4	33	Gangrene of right foot, pneumonia and acidosis, 1; otitis media, sinus thrombosis and acidosis, 1; gangrene of the leg and septicemia, 1; multiple abscesses with septicemia, 1

GROUP 2

During 1923-1924, 163 patients with diabetes were treated at the hospital; seventy-eight of them were males and eighty-five females. In the medical service, of the 134 treated, thirteen died, giving a total mortality of 9.7 per cent. Only one among these died in coma, a mortality from coma of 0.7 per cent.

The surgical service cared for twenty-nine cases, resulting in seven deaths, none being due to coma. In table 2, the causes of the thirteen deaths are given.

TABLE 2.—*Mortality in One Hundred and Sixty-Three Cases (Group 2, Seventy-Eight Males, Eighty-Five Females) Treated During 1923-1924*

Cases	Deaths	Mortality, per Cent	Cause of Death
Medical Service			
134	13	9.7	Diabetic coma, 1; pneumonia, 3; empyema, 1; cardiorenal disease, 2; carcinoma of the colon, 1; leukemia, 1; chronic endocarditis, 1; acute mastoiditis, 1; gangrene of foot with gas bacillus infection, 1; carbuncle with septicemia, 1
Mortality due to diabetic coma, 0.7 per cent			
Surgical Service			
29	7	24.4	Carcinoma of the sigmoid, 1; acute appendicitis with abscess, 1; cardiorenal disease, 1; uremia with gangrene of foot, 1; gangrene of foot and septicemia, 1; carbuncle with septicemia, 1; cellulitis with septicemia, 1

SUMMARY

In comparing the mortality of the two groups, the preinsulin period with the postinsulin, we find that:

1. The mortality due to diabetic coma dropped from 12 per cent to 0.7 per cent.
2. The general mortality diminished about 9 per cent.
3. Infection is the most frequent cause of death in patients suffering from diabetes, and as ordinary infections are not influenced by the use of insulin, which must often be used in much larger doses, emphasis is to be put on the prevention of infection rather than its cure.

791 Park Avenue—260 West Seventy-Second Street.

INTRAGASTRIC RADIUM TREATMENT OF CARCINOMA OF THE STOMACH *

THOMAS O. MENEES, M.D.
GRAND RAPIDS, MICH.

The frequency and low operability of cancer of the stomach make improved methods of irradiation desirable. The application of radium immediately to the growth has definite advantages over external roentgen-ray therapy alone.

Pinch [1] has applied radium to the interior of the carcinomatous stomach by having the patient swallow a radium tube on a string. The position is observed by the roentgenoscope, and the radium may be moved by pulling on the string. From this, he has obtained definite palliative results, in slowing the rate of growth, checking hemorrhage, and relieving pain.

With radium applied in this way, the surface of the tumor bears the brunt of the exposure. Adjacent sensitive organs are protected by the rapid decrease in the intensity of irradiation, with distance. This permits heavy caustic irradiation, sufficient to influence highly resistant scirrhous carcinomas and adenocarcinomas. Roentgen-ray treatment could not be carried to this intensity because of the injury to other viscera in close relation to the stomach.

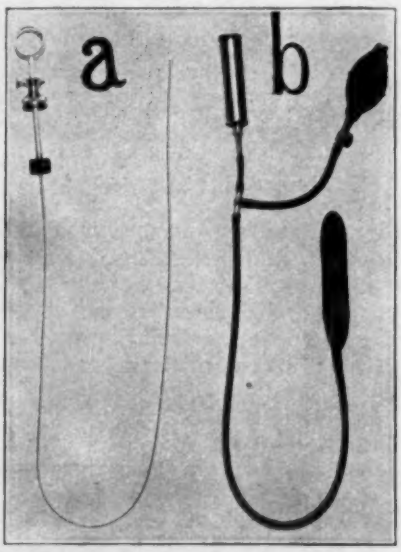

Fig. 1.—Intragastric radium applicator: In use, *a* is inserted in *b*; this permits movement of the radium in the distended stomach, without loss of the air, necessary to visualize tube and neoplasm, under the roentgenoscope.

By this method, the exact relation of the radium to the stomach wall is not determined, and uninvolved mucosa may receive excessive exposure. Also, there is little control over the position of the radium. Without accurate localization and control, a thorough irradiation of the surface of the tumor cannot be carried out.

For accurate placing of the radium, both tube and tumor must be visualized. A radium tube in the stomach is readily visible under the roentgenoscope, but the tumor is invisible without a contrast medium. With the usual contrast medium, barium sulphate, the tube is lost in the barium shadow. This leads to the use of air, as it will contrast both. The air must be confined to keep it under control and prevent it from rising to the highest point of the stomach.

To meet these requirements, a rubber balloon was cemented to a small rubber tube.[2] The radium on a flexible spirally wound wire was placed inside this. The bulb of a sphygmomanometer was attached to the other end of the tube.

This applicator, when passed into the stomach and distended, gave a clear outline of the radium tube and the carcinomatous filling defect. It was unsatisfactory, because the radium could not be moved without loss of the air in the bag. To overcome this difficulty, the spiral wire carrying the radium is attached to the piston of a syringe (fig. 1). The free end of the rubber tube is drawn over the tip of the syringe to form an air-tight seal. The bulb is attached by a T-connection. Any movement of the piston of the syringe is transmitted to the radium through the spiral wire, and it can be pushed ahead or pulled back without loss of air.

The applicator is passed as a stomach tube into the portion of the stomach involved. It is distended to outline any irregularities of the tumor, and the radium is adjusted to the level of the growth by movement with the syringe (fig. 2). Gravity is of help in bringing the radium in closer contact with growths involving only one curvature, and the patient's position is changed to obtain this. An arrangement should be made by which the patient can be roentgenoscoped at right angles without change of position, as it is frequently important to determine the position of the radium in three dimensions, without moving the patient and displacing the radium.

The radium is used lightly filtered (0.5 mm. of silver) to obtain the greatest surface effect with the least general irradiation, and to minimize the time of application. The treatment is divided into short sessions of from one to three hours daily and continued until all of the accessible surface of the tumor has been covered. Usually 50 mg. is used. More would shorten the time of treatment but would stiffen the end of the applicator and make it difficult to pass into narrow or tortuous lumina. In some cases a moderate amount of high voltage roentgen-ray therapy has been given also. This must necessarily be limited, because of the frequent roentgenoscopic examinations. The tube is small, and after passing, gives the patient little discomfort. A reasonable distention of the bag gives no sensation.

The radium cannot be satisfactorily placed in all cases by this method. Where the lumen is much narrowed or tortuous, it may be impossible. In growths limited to one curvature, occasionally the outline of the growth is difficult to obtain, and accurate placing impossible. Then, only small dosage would be permissible. In small tumors limited to the pylorus, it is difficult to place the radium accurately.

The microscopic structure of tumors has been sufficiently correlated with their response to irradiation to enable us to predict the effect on a given tumor, and the quantity necessary to affect it.[3] Adenocarcinomas and scirrhous growths, which constitute the majority of gastric cancers, demand heavy caustic irradiation to influence them. In these, the danger of perforation would not permit heavy dosage sufficient to destroy the full thickness of the tumor. So palliation is all that can be hoped for, with some surface destruction and

* From the Blodgett Memorial Hospital.

1. Pinch, A. E. H.: A Report of the Work Carried Out at the Radium Institute, London, from Jan. 1, 1922, to Dec. 31, 1922, Radium **2**: 56-58 (April) 1923.

2. Menees, T. O.: Intragastric Radium Application, Am. J. Roentgenol. **11**: 561-562 (June) 1924.

3. Ewing, J.: Radium Report of the Memorial Hospital (Second Series), New York, Paul B. Hoeber, Inc., 1924, p. 247.

possible fibrosis of the deeper portions. The more cellular tumors, as medullary and diffuse carcinoma, are quite sensitive to irradiation. One case probably belonging to this class has undergone a complete clinical retrogression, with disappearance of the filling defect (fig. 3). There has been no recurrence of symptoms in the two years since last intragastric treatment. Parham[4] considers colloid carcinoma as rather sensitive to irradiation, but none has been treated by this method. Naturally, metastases would not be influenced by this method.

As the majority of gastric cancers are relatively insensitive to irradiation, this method is practically only palliative. It is of value in slowing the rate of growth and relieving pain and hemorrhage. Probably, the greatest value is in opening up the narrow portions of the stomach by destruction of the surface of the tumor, and preventing an obstruction with its violent train of symptoms. There is also an increased fibrosis of the deeper portions of the tumor with restraint of growth and obliteration of blood vessels. Along these lines, much can be done to prolong and make more comfortable the life of the patient and allow death to occur from other complications, rather than as a result of hemorrhage or starvation from a complete obstruction.

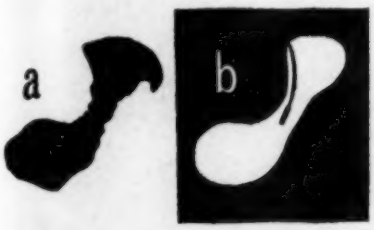

Fig. 2.—*a*, tracing of roentgenogram of barium-filled stomach, showing an extensive annular carcinoma of pars media; *b*, tracing of same stomach as *a*, with the carcinomatous filling defect outlined by the air-inflated bag of the applicator. The smaller irregularities of the tumor surface are lost, but the general contour of the involved portion of the stomach is clearly defined. The radium tube, which would be lost in barium, is sharply contrasted by air.

As it is practically palliative, the method is no competitor of surgery, but rather a complement. The pyloric growths accessible to surgery are the most difficult to apply radium to accurately. With the less accessible cardiac growths, it is much easier to place radium.

The dangers are probably small if proper care and gentleness are used in placing the radium. Perforation and hemorrhage would be the most serious complications. Perforation can be guarded against by not allowing the radium to come in contact with uninvolved portions of the stomach wall. Where involved, the stomach is thickened, and by using lightly filtered radium, the destructive effect is confined to the superficial portions of the tumor, and the possibility of perforation negligible. Hemorrhage from introduction of the radium is likely only in highly cellular growths with many poorly developed blood vessels. This hazard must be taken as these tumors are frequently highly sensitive to irradiation, and the tendency to hemorrhage is decreased by the obliterating endarteritis of the radium reaction.

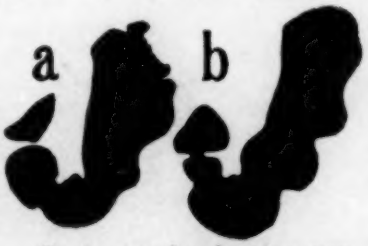

Fig. 3.—*a*, tracing of roentgenogram showing carcinomatous filling defect in fundus; *b*, tracing of same stomach as *a*, showing disappearance of the filling defect following intragastric radium treatment.

4. Parham, D.: Colloid Carcinoma, Am. Surg. 87: 103-104 (Jan.) 1923.

SUMMARY

1. By the method of intragastric application of radium described, a greater dosage can be applied to the surface of a gastric carcinoma with less general irradiation of the upper abdomen. This can be pushed to a caustic effect with superficial necrosis.

2. From this increased irradiation greater palliative effects can be obtained in slowing the rate of growth, checking hemorrhage, relieving pain, and preventing obstruction by destroying the surface of the tumor in narrow portions of the stomach.

3. The method is practically only palliative, and complete retrogression is only to be expected in highly cellular anaplastic growths which are not too extensive.

4. There is little danger in the method.

Clinical Notes, Suggestions, and New Instruments

CONGENITAL VARICOSITY OF THE ANGULAR VEIN

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J. G., a boy, aged 20, came to me complaining of a small mass over the left nasal bone, which had been present for the last thirteen years. For the last two years it had been getting larger, until at the time I saw him, it was the size of a hazelnut. He came for medical help because of cosmetic reasons. The patient did not remember the mass appearing after a blow, but stated that it may have been there from childhood, and remembered seeing it first about thirteen years previously. On careful questioning, he said that when the mass first appeared, as far as he could remember, a doctor told him that by lancing the mass it would disappear and the trouble would clear up. It was probably then mistaken for a cyst. Fortunately resort to this treatment was not made. Six years previously, a simple mastoidectomy had been performed on the same side, but this was done years after the mass was noticed and had no bearing on the case at all.

The slightly bluish mass was situated over the left nasal bone, inside the inner canthus of the left eye, and was the size of a hazelnut. It was soft, and could be made to disappear on pressure. The nasal bone seemed to be eroded by the pressure of the mass. Believing it to be of venous character, I did the various tests, according to the anatomy of the venous system of the face, so as to show whether interference with the return flow of venous blood would have any effect on its size.

It is proper at this moment to review the anatomy of the facial vein.[1]

The frontal vein descends over the forehead on the side of the median line, lying beneath the skin, and terminates at the inner angle of the orbit by uniting with the supra-orbital vein to form the angular.

The supra-orbital is a relatively large trunk which runs transversely above the superior margin of the orbit. It arises at the external angle of the orbit, passes inward beneath the orbicularis palpebrarum, pierces the muscle at the inner angle of the orbit, and unites with the frontal vein to form the angular.

The facial vein is formed by the frontal and supra-orbital veins at the inner extremity of the eyebrow. It passes around the inner border of the orbit, then obliquely downward and backward across the face, over the ramus of the mandible in front of the angle, thence across the submaxillary and superior carotid triangles, to open into the internal jugular at the level of the hyoid bone. The portion of the vein from its formation to the lower border of the orbit is the angular vein, and branches arise from this which pass into the orbit

1. Piersol: Human Anatomy.

to communicate with the ophthalmic vein. Below the ramus of the jaw, it receives a large communicating branch from the external jugular, and the portion between this communication and the internal jugular is the common facial vein.

The facial and angular veins are destitute of valves, or have valves insufficient to prevent the flow of blood in an inverse direction—from the facial and angular veins into the ophthalmic. The two most important communications with the cavernous sinus are through the ophthalmic vein. Much of the superficial blood of the face passes inward to the brain case and the interior of the facial region, while the remaining blood flows downward to join the jugular veins.

The superior ophthalmic vein will have a bearing on the eye findings in this case. It is sufficient to mention its tributaries, which are the anterior and posterior ethmoidal veins, the lacrimal vein, the muscular veins, the two superior venae vorticosae, the anterior and posterior ciliary venae and the venae centralis retinae.

When the patient's collar was tightened, the mass became larger; removal of the collar caused the mass to become smaller and barely noticeable. In order to show the effect of pressure on the veins by means of the finger, I had the patient remove the collar. Then I compressed the veins at various points at which the return flow was interfered with. Pressure on the angular, facial, common facial and internal jugular veins increased the size of the mass. Removal of the pressure, thus removing the obstruction to the return flow, each time made the mass disappear.

Fig. 1.—Effect on the size of the mass by the wearing of a very tight collar, which demonstrates the interference with the return flow of venous blood by the collar and, therefore, the enlargement of the varicosity.

Fig. 2.—With the collar removed, the mass has entirely disappeared or is very slightly perceptible.

Fig. 3.—With the collar removed, pressure on the angular vein causes the reappearance of the mass.

Fig. 4.—With the collar removed, pressure on the facial vein causes the reappearance of the mass.

Fig. 5.—With the collar removed, pressure on the deep facial vein and the internal jugular vein causes the reappearance of the mass.

Examination of the eyes showed corresponding changes in the veins of the eye on the side similar to that of the mass. The eyes were examined by Dr. Martin Cohen, to whom I referred the patient with the belief that an interesting condition might be discovered, because of the anatomic communication between the angular and the ophthalmic veins.

With the patient's collar off, examination of the left eye showed the disk of normal appearance. The veins and arteries were normal. There were expansile pulsations on the physiologic cup. The right eye was normal.

With the collar tightened, examination of the left eye showed the conjunctival veins at the outer quadrant more injected than in the right eye. After three minutes, the vein over the physiologic cup was getting larger than in the remaining portion of the retina; the pulsations were more evident. The superior and inferior retina veins were more engorged. There was no change in the course of the vessels and in the arteries. The cornea of the same eye, examined by the slit lamp, showed pulsations of the eyeball. In the right eye vascularization was normal. By the slit lamp method, the oscillatory move-

The facial vein is less flaccid than most superficial veins. Because of these facts, I would emphazise the point which, although it has no direct bearing on this case, cannot be overlooked in the discussion of these anatomic relations, and that is, the ease with which septic infections of the face or forehead may spread by way of the ophthalmic vein or pterygoid plexus to the cavernous sinus, resulting in thrombosis or meningitis.

ment was normal, and there were no pulsations visible. Physical examination by the internist revealed nothing of unusual interest, excepting a slight pulsation of the subclavian arteries. The systolic blood pressure was 136; diastolic, 86. Clinical examination of the blood revealed: nonprotein nitrogenous constituents, in milligrams per hundred cubic centimeters: uric acid 4.5; urea nitrogen, 12; miscellaneous constituents: sugar 0.097; chlorides, as sodium chloride, 0.492. To rule out congenital cardiac and vascular anomalies, the roentgen ray was employed, which showed the heart proportionately small and inclined to the dropped type, which, however, was more or less suited to the stature of the patient. There was no gross abnormality in the proportional dimensions or contour, excepting moderate hilum thickening. There was no evidence of gross pathologic change in either pulmonic field, excepting perhaps a hypervascularization a shade more noticeable in the upper lobes.

The Wassermann reaction was negative.

THE PURPOSES OF PRESENTING THE CASE

1. Since the history dates back thirteen years, I believe the condition may be regarded as congenital, as before that time it may have been so small as to attract no attention.
2. The case presents an unusual location for varicosities.
3. This type of mass should be differentiated from a cyst in that area or from a tear sac involvement. The consistency of the mass and its disappearance on pressure ruled out a cyst. There being no history of tearing of the eye and the mass being too high up ruled out dacryocystitis.
4. It is also important to differentiate this mass from a meningocele, because of the same location.

TREATMENT

It is very essential for the patient to wear a loose collar, so as to remove any impediment to the return flow.

Until this day the patient has refused operation, but when he submits to the operation it will be necessary to ligate the supra-orbital and the frontal veins above the mass and the angular vein below the mass; the results should be good because of the sufficient collateral circulation in this area.

RADIUM APPLICATOR FOR TREATMENT OF LESIONS ABOUT THE HEAD, FACE AND NECK

WILLIAM H. KENNEDY, M.D., INDIANAPOLIS

Great difficulty has been experienced with methods of applying radium to the face, head and neck. This applicator, while very simple in construction, is adjustable to any angle by bending the copper wire, and when once adjusted remains

Applicator in position (*a*) at distance; (*b*) for treating lip; (*c*) for treating nose.

in perfect contact with the lesion, allowing the patient to move his head in any direction.

Another important consideration is distance without the use of blocks or gauze. This method eliminates the handling of radium, as it can be placed in the rubber tube with forceps and removed in the same manner.

It consists of a leather head-band, copper wire and universal ball joint made to be used with one-fourth inch rubber tubing, in which the radium is placed.

The applicator is manufactured by the Akron Surgical Instrument Company, Indianapolis.

A NEW URETERAL STONE EXTRACTOR AND DILATOR

WILFORD A. COUNCILL, M.D., BALTIMORE

In an effort to overcome the uncertainties of our present methods of treatment for ureteral calculi—waiting for the stone to pass spontaneously, ureteral dilatations and injections of oil, with the ever present possibility of permanent injury to the kidney, and perhaps final surgical intervention—I have

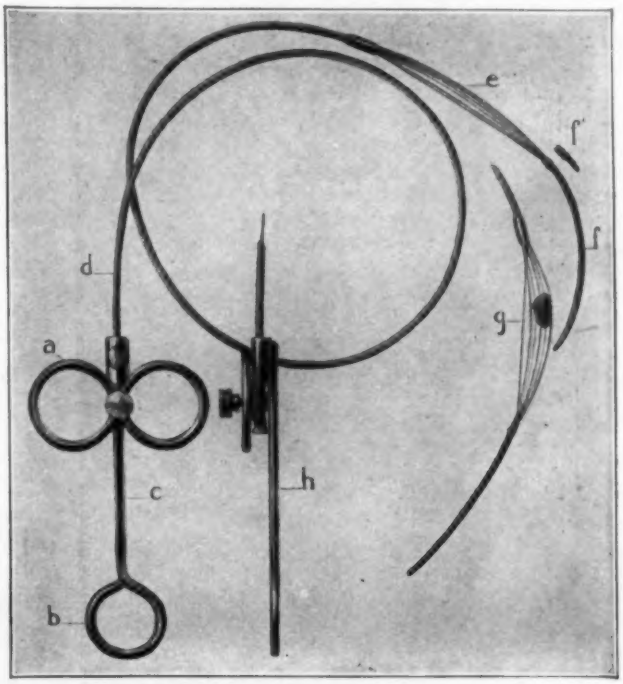


Fig. 1.—*a*, movable handle; *b*, ring for thumb; *c*, groove in shaft for the movement of *a*; *d*, spiral sheath; *e*, wires closed; *f*, filiform tip; f^1, metallic tip.

devised an instrument which has been used successfully in a number of cases. This instrument gradually dilates and protects the ureteral wall while the stone is being extracted, thus minimizing trauma and reaction.

Figure 1 shows a flexible instrument consisting of five principal parts: a movable handle, *a*, connected to an inner or central wire, *g*, and with thumb in *b*, slides in a groove, *c*, opening the mesh of wires for reception of the stone; *d* is a spiral sheath through which the central or control wire connects with the filiform tip, *f*; tension made on *a* causes the mesh, *e*, to open; the central wire, *g*, becoming an external wire, serves to hold the stone in place when tension is removed from *a*.

Preliminary to the extraction, a roentgenogram is taken to show the position and size of the stone, and a pyelogram is made to determine the size and condition of the ureteral tract. If strictures are encountered, they must be dilated before one proceeds further. When the ureteral tract has been dilated sufficiently, as confirmed by a second pyelogram, the extraction of the stone by the instrument may follow.

The patient is given morphine, ¼ grain (16 mg.), and scopolamine, 1/100 grain (0.6 mg.). An operating cystoscope is passed and the ureter in question catheterized. Procaine, 4 per cent, is injected into the ureter and allowed to remain for ten minutes. With the catheter still in place, olive oil is injected until there is a fulness felt in the kidney region. The catheter is withdrawn and the extractor passed up to the desired point (Fig. 2 *a*). A second roentgenogram is taken to show the relation of the extractor to the stone. When this is correct the mesh is opened (Fig. 2 *b*) thereby forcing the stone into the wires (Fig. 2 *c*). When the stone is brought down to the bladder, the handles of the instrument are removed and the cystoscope is withdrawn. The extractor is taken out through the urethra with the stone intact.

When the stone can be seen the fluoroscope is ideal, as each step can be followed from the introduction of the instrument to the extraction of the stone.

REPORT OF CASES

Eighteen stones have been removed from different locations in the ureteral tract, varying in size from a grain of wheat to that of a bean. Following are brief descriptions of three cases in the series:

CASE 1.—J. K., tailor, aged 43, whose general condition was good, had been troubled with ureteral calculi for six months. He complained of a dull aching pain in the right kidney region associated with a slight frequency and some hematuria. A roentgenogram revealed a shadow about 4 cm. from the ureteral orifice. A pyelogram showed a dilatation above the stone but no abnormalities below. Both ureters were catheterized and kidney function tests were made. Urine obtained from the left side was normal and the output of phenolsulphonphthalein, 30 per cent. The urine from the right side was cloudy and contained many pus and red blood cells, the phenolsulphonphthalein output being 10 per cent. An extractor

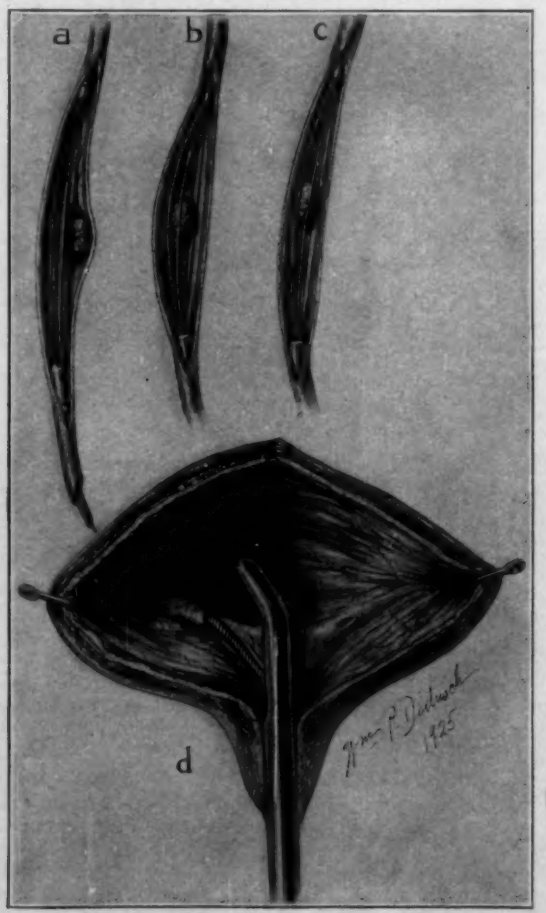


Fig. 2.—*d*, interior of bladder; cystoscope and stone extractor in ureter; *a*, wires at correct position; *b*, wires opened with stone enmeshed; *c*, stone extractor with stone enmeshed about to be withdrawn, showing how wires protect the lumen of the ureter.

was passed and a stone about the size of a pea was removed. Beyond a slight discomfort at the time of extraction, the patient had no ill effects and went to work the next day.

CASE 2.—H. M., a farmer, aged 47, whose general condition was good, had had intermittent attacks of renal colic for two years. He complained of pain in the left lumbar region associated with some frequency of urination and a marked hematuria. A roentgenogram revealed a shadow 2 inches (5 cm.) above the pelvic brim. The ureters were catheterized and specimens collected. The urine from the left side was cloudy and contained much pus; that from the right side was normal. Functional tests of phenolsulphonphthalein given intravenously showed: on the right side, appearance time three minutes; output, 30 per cent in half an hour; on the left side, appearance time, five minutes; output, 15 per cent. A pyelogram showed a dilated ureter and kidney pelvis above the stone; below, the ureter was small and constricted. After several ureteral dilations, the extractor was passed and a stone the size of a bean was removed. The patient returned in one week for further treatment. All symptoms cleared up. In this case an operation in all probability would have been necessary.

CASE 3.—H. T., an engineer, aged 30, whose general condition was good, entered the hospital complaining of pain in the left side associated with frequency of urination, urgency and hematuria. A roentgenogram showed a shadow about the size of a bean just below the pelvic brim. The cystoscopic examination was negative except for blood coming from the left ureter, which in turn was catheterized. As the catheter was passed, obstruction was met at the shadow, as shown in a roentgenogram and confirmed by a pyelogram. The patient left the hospital and later come to the office for treatment. In a week's time a second roentgenogram was taken and showed the stone at the same position. After the ureter had been dilated sufficiently, a rough triangular stone was removed. Following the extraction, the patient complained of a slight discomfort for several days.

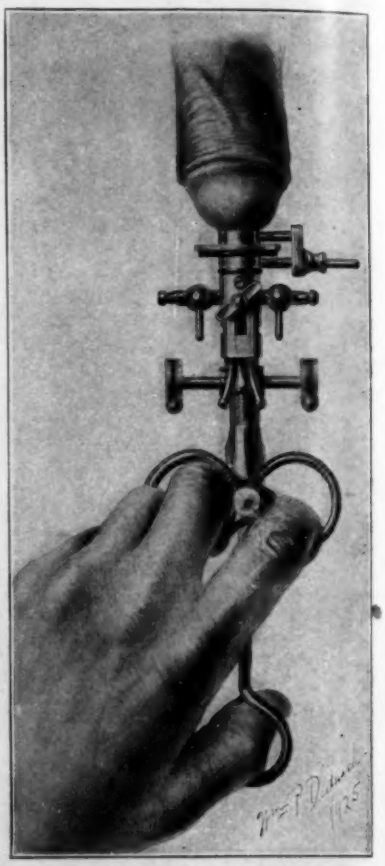


Fig. 3.—Instrument introduced through cystoscope; method of opening wires either to dilate the ureter or use as a stone extractor.

In another case the instrument served as a dilator and allowed the stone to pass of its own accord: A. M., a clerk, aged 50, primarily complained of pain in the back; he had had intermittent pain in the right loin associated with a slight hematuria for three months. A roentgenogram revealed a shadow just below the kidney pelvis, which was confirmed by a pyelogram. The usual routine cystoscopic technic followed and the extractor was passed. There was some difficulty in passing the instrument beside the stone, and instead of extracting the stone, it was pushed up into the kidney pelvis. The ureter was dilated and the patient told to return in two days for further treatment, but instead of returning at the time requested, he came in the next day, having passed the stone that night. This demonstrates that while there was a failure on extraction, the ureter was sufficiently dilated with the instrument to allow the passage of the stone.

SUMMARY

By this procedure, duration of pain, chance of injury to the kidney and possible surgical intervention are minimized, and even though the instrument was originally designed as a stone extractor, it has been used effectively as a dilator.

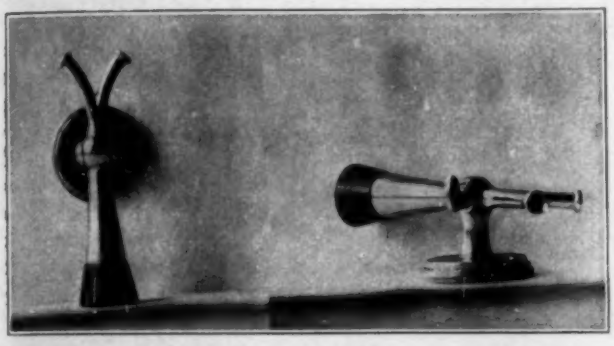
A NEW COMBINED STETHOSCOPE CHEST PIECE *

HOWARD B. SPRAGUE, M.D., BOSTON

Because of the variable qualities of different cardiac murmurs, it has been evident for a considerable time that no single stethoscope chest piece is satisfactory in transmitting all the sounds produced in the heart. Ideally, a stethoscope that could be made to vary its optimal resonating qualities between wide limits in order to respond correctly to both high and low pitched sounds would be the most sensitive instrument to use. Practically, such instruments are cumbersome and complicated.

For clinical uses two forms of stethoscope chest piece have been found adequate in transmitting heart sounds and murmurs, except in the rare instances in which the naked ear is more satisfactory in responding to high pitched, blowing murmurs, such as those of aortic regurgitation. These two chest pieces are the bell type, which is most useful for low pitched murmurs, and the Bowles type, which registers high pitched murmurs more accurately.

The use of these two forms of stethoscope has been a routine procedure in the Cardiac Clinic of the Massachusetts General Hospital, and it is felt that no cardiac examination is complete unless advantage has been taken of the particular qualities of each chest piece. The bell stethoscope is capable of demonstrating rumbling diastolic murmurs of mitral stenosis which are inaudible with the Bowles type, and, conversely, the



Combined chest piece, showing position at left when bell is in use (front view) and position at right when Bowles section is in use.

latter records the hissing or blowing murmurs of aortic regurgitation which cannot be heard with the bell.

The frequent changing from one chest piece to the other, often several times during the examination of a single patient in various positions, necessitated removing the aurals from the ears in order to avoid unpleasant noises, especially from striking the diaphragm of the Bowles. It also was inconvenient from the wearing out of the rubber tubes and the need for disposing of one chest piece when using the other.

The only alternative lay in the use of the Bloomfield or similar detachable connection. This we have found to be unsatisfactory for the reason that the connection tends to become loose, allowing the Bowles section to drop out or causing extraneous noises, and the combination does not do away with the necessity of disposing of the lower section while using the upper. I designed the instrument here described to remedy these difficulties. It is a combination of the Bowles and bell chest pieces in which each is in its customary position when in use. The illustration shows the mechanism, which consists merely in the connection of the receivers by a three-way valve. By simply turning this valve, one or the other chest piece is connected to the binaurals and the other is shut off. This precludes any loss of sound through the other chest piece and also prevents disturbance by extraneous noise.

Trial of this combination chest piece by Dr. Paul D. White and myself at the clinic has shown that its use makes the examination of cardiac patients much easier and more rapid.

The George P. Pilling & Son Company of Philadelphia have cooperated in designing the instrument.

* From the Cardiac Clinic of the Massachusetts General Hospital.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1837)

Medicated Enemas.—Medicated enemas for diacolonic action should, as previously stated, be given in the smallest bulk possible provided irritation is minimized by sufficient dilution. Starch water, being more efficient in lessening irritation, should be regularly employed as a diluent whenever such is required. Infusion of digitalis may be administered by rectum in tablespoonful doses, and even be made to carry a moderate dose of potassium acetate if desired. The following medicaments are generally well retained when given in the form of micro-enemas (30 cc.): tincture of opium, 1 cc.; chloral hydrate, from 1 to 2 Gm.; sodium salicylate, 2 Gm.; caffeine sodiobenzoate, 0.2 Gm. In prescribing enemas, the medicating ingredients are ordered from the apothecaries in pure form or in solution, which is then diluted, if necessary, with water, salt solution, or best starch water just before administration. Thus, in the treatment of infantile convulsions, we might prescribe chloral hydrate, 0.3 Gm. and sodium bromide, 0.6 Gm., in a teaspoonful of water, the dose to be diluted with 2 tablespoonfuls of starch water, and given by slow rectal injection.

Oil may be used as a vehicle for the diacolonic administration of oil-soluble volatile bodies. Thus, for colonic anesthesia, ether is employed in quantities of from 120 to 180 cc. with half the amount of olive oil, and the addition usually of 7.5 cc. of paraldehyde. The details of administration of these are given by Meyer and Robbins.[63] The interesting suggestion has been advanced by Goldbloom [64] to introduce, in the treatment of whooping cough, rectally 2 cc. of ether dissolved in 15 cc. of olive oil twice daily. He reports marked symptomatic improvement in a majority of cases in which he used it, especially in those cases that had well advanced into the paroxysmal stage.

For endocolonic action, in the treatment of catarrhal and ulcerative conditions of the large intestine, astringent enemas are of value. First among these deserves perhaps to be mentioned Cantani's tannic acid enteroclysis, which he used with success, especially in the premonitory stage of cholera, but which may also be employed in other inflammatory conditions of the colon. He injected slowly several times daily 2,000 cc. of 0.5 per cent tannic acid solution at about 104 F. The quantity of tannic acid may be varied from 0.25 to 1 per cent, and it may be most conveniently prescribed for the patient in form of the official glycerite of tannic acid (20 per cent), 25 cc. of which added to 1 liter of water yields a 0.5 per cent solution. The addition

* This is the twenty-fifth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

63. Meyer, H. W., and Robbins, B. F.: Colonic Anesthesia, J. A. M. A. **83**: 1581 (Nov. 15) 1924.

64. Goldbloom, Alton: The Use of Ether in Pertussis by Intramuscular and Rectal Injection, J. A. M. A. **85**: 1791 (Dec. 5) 1925.

of acacia (5 per cent) or the use of starch water to lessen by colloidal demulcent action the irritation of the astringent is advisable. In chronic colitis with colonic tenderness and diarrhea, good results are obtained from enemas of silver nitrate, in 1 : 10,000 solution, gradually increased in strength from day to day to the point of tolerance (burning pain), which is usually reached with solutions of 1 : 1,000 or 1 : 2,000 strength. These astringent enemas are intended to be retained as long as possible.

Antiparasitic Enemas.—Quinine is quite unsuitable for absorption through the colon (diacolonic action), as has been shown by William Fletcher.[65] Weak solutions are too bulky to be retained, and the quinine is not absorbed sufficiently from them to enable one to rely on its action. Strong solutions, from 0.5 to 1 per cent, are so irritating that they are not, as a rule, retained longer than twenty minutes. The pain and tenesmus that follow the injection of strong solutions and the discharge of mucus and shreds of membrane, even after the use of weak solutions, are evidence of the poisonous action of quinine on the colonic mucosa. The absorption from 4 Gm. given by the rectal route was inferior to that from 0.15 Gm. given by mouth. For endocolonic action, on the other hand, quinine is useful. Thus, for the treatment of intestinal amebiasis, quinine sulphate or hydrochloride solution, from 1 : 2,000 to 1 : 1,000, in quantities of from 1 to 2 liters, is particularly recommended. The solution should enter slowly by gravity, through a long rectal tube passed as high as possible and should be retained as long as possible.

In cases in which such quinine treatment causes too much irritation, what might be called endocolonic osmotherapy, as suggested by Van der Togt,[66] might be resorted to. In experiments on means of destroying amebas by high osmotic tension in the bowel, he found sodium chloride and carbonate too irritating in the high concentrations required for this purpose. However, sucrose enemas, from 20 to 40 per cent, given twice daily for eight consecutive days, cured a large proportion of cases. Soap solution (1 per cent), it is asserted, kills the pregnant females of *Oxyuris*. Vinegar (from 30 to 100 per thousand) enemas are also recommended in oxyuriasis.

Simple Oil Enemas.—These are essentially evacuant enemas; but, as they are to be retained for many hours, usually over night, they are given with the technic of the retention enema. The indications for simple oil enemas are: 1. To soften feces, in constipation characterized by the formation of hard scybala and in that due to partial obstruction of the colon. 2. For evacuant action, in so-called spastic constipation, in pelvirectal constipation, and in any other form of constipation in which oral administration of cathartics is contraindicated by gastric disturbance. 3. For soothing action, in excessive colonic and rectal irritability, in colitis, and in proctitis. 4. It has been suggested that oil enemas might inhibit absorption of toxic products. That the oil has the power of removing substances soluble in it is shown by the fact that it is passed dark yellow or olive green and of offensive odor. We have no definite knowledge, however, of the degree to which this property might be of clinical value.

The chief contraindication to oil enemas is diarrhea, and mainly because, in this condition, the oil would not be retained for a sufficient length of time to be of use; although another objection against the introduction of saponifiable oils would be the fact that excessive peristalsis may carry intestinal juices far down the colon, and the results of the oil digestion might still further increase the irritation.

To be well borne, the oil must be pure and free from rancidity, of an acidity not exceeding from 40 to 55 (Fleiner). This is more important than that it come from a certain source. Thus, poppy seed oil, oil of sesame, or cottonseed oil, when pure, are just as good for this purpose as olive oil. It would seem that petrolatum would be preferable to all of these, as it can never become irritant.

The following technic is recommended: For self administration of the oil, the patient should have everything prepared before going to bed, so that he does not have to get up after having taken the injection. The bottle of oil is placed in a basin of hot water until it has acquired blood heat (100 F.). An ordinary fountain syringe might be used, provided the nozzle has a sufficiently large bore to permit the oil to pass. Though it is intended that the oil be introduced slowly, the bag usually has to be hung 2 or 3 feet high, owing to the viscosity of the oil, which makes it run rather slowly. The clip should be placed within easy reach of the patient. Having poured the oil into the bag, the patient lies on the left side with a folded towel underneath the buttocks. The nozzle is inserted into the anus, and the oil permitted to flow. Should the patient experience distress or desire to move the bowel, the flow of the oil is checked and the patient remains quiet until the desire has passed away. It might then be possible to introduce an additional quantity of oil. It is usually best, however, to be satisfied with the introduction of an amount that can easily be retained. A piece of absorbent cotton or a woman's sanitary towel or both may be applied to prevent accidental soiling of the bed, for the passage of flatus may be accompanied by a spurt of oil. If the injection produces discomfort and interferes with sleep, it may be taken early in the morning, and the patient may lie in bed for three or four hours afterward. The patient should understand that, unless the oil remains in the intestine for several hours at least, satisfactory results cannot be expected. The total quantity to be injected depends, therefore, on the patient's ability to retain it. This is so variable that no definite quantity can be stated. The principle to be followed is to have the patient gradually increase the amount injected on successive nights, until a satisfactory amount can be introduced and retained. The patient may not be able to retain more than 70 cc. at first, but is likely to retain in course of time as much as 250 and even 500 cc. For children, from 50 to 150 cc.; for infants, 15 cc. suffice. When scybala disappear, and soft mushy stools are passed, the quantity introduced as well as the frequency of injections is gradually diminished. Just as soon as satisfactory daily evacuations have been secured and the patient's distress has been relieved, the injections may be given on alternate nights, unless resumption of daily injections is necessitated by the patient's condition. Later on the injections are given every third night and finally only on the evening of the day on which the bowels were not opened. A single injection may cause daily evacuation for several successive days.

65. Fletcher, William: Bull. Inst. M. Research, Federated Malay States, 1924.
66. Van der Togt: Geneesk. Tijdschr. v. Nederl.-Indie **61**: 395, 1921.

When the injection acts well, it will be followed by a very soft bowel movement in the morning. If the morning evacuation is not obtained, an enema of physiologic sodium chloride solution should be taken in the morning after breakfast.

Evacuant Enemas.—Whenever an abnormal accumulation of feces occurs in the descending or pelvic colon or in the rectum, the bowel should be thoroughly washed out before other treatment is instituted. It is really not rational to upset motor and secretory functions all the way down the bowel by giving a physic in order to clear out the lower end of the tube when this can be done so much more directly by washing out from below. Preeminently is the enema the only evacuant to be considered when intestinal obstruction is present or suspected, in which cathartics merely stimulate the already overstimulated bowel above the site of the obstruction, increasing pain and vomiting and aggravating shock and the injury existing at the point of obstruction. Hence the patient's chances for recovery decrease as the use of cathartics is pushed. Here all efforts to make the bowel move should be from below; and evacuant enemas, in increasing order of potency, should be repeated every three or four hours, care being taken not to overdistend the colon, until success is secured or the uselessness of the procedure becomes evident, when operation should be instituted without delay, within twelve hours, if possible.

Whether high or low, large or small, hot or cold, simple or medicated, enemas should be employed to secure evacuation in any one case depends on the conditions present. If the rectum merely is to be emptied of feces, 0.5 liter injected rapidly with the patient in the sitting posture suffices. If the most thorough possible cleansing of the bowel is aimed at (colonic flushing), the largest possible quantity of warm water—from 1 to 2 liters—is slowly introduced with the patient recumbent or, better still, in the knee-chest position. In either case, soap (about 1 to 2 per cent) is the most generally useful addition. Large colonic flushings, however, must not be employed for many weeks in succession, as they are liable to increase the atony of the bowel and of the abdominal musculature. On the other hand, a small (0.25 liter), cool enema rather quickly injected into the bowel, to stimulate it to evacuation, may be considered one of the least objectionable procedures, even when employed quite habitually. In such cases, a progressive lowering of quantity and of temperature should be aimed at, the patient always first attempting to have a bowel movement without its aid.

When the soapsuds enemas fail to secure the desired results, a purgative enema may be resorted to. A small evacuant enema of magnesium sulphate, 60 Gm.; glycerin, 30 cc., and water, 120 cc., is popular in some hospitals. A larger purgative enema is composed of hot soapsuds, 0.5 liter, with magnesium sulphate, 60 Gm.; glycerin, 60 cc., and oil of turpentine, 15 cc., emulsified by yolk of egg. Another useful combination is 0.5 liter each of milk and molasses (or honey). One or the other of these rarely fails to secure the evacuation, if it is physically possible.

In the treatment of tympanites, volatile irritants seem more efficient than the nonvolatile cathartics: evidently the former appeal more especially to the gas-evacuating mechanism than the latter. Volatile agents, such as asafetida or oil of turpentine, are best administered in the form of an emulsion, and it is under this heading that their prescribing has been discussed.

Colonic Irrigation.—Permitting fluid to run into and out of the bowel by means of a two way irrigator, until the washings return clean, secures the most thorough possible cleansing and medication of the colon. Thus, in colitis, especially the ulcerative form, irrigating the colon with huge quantities (from 16 to 20 liters) of water as hot as can be borne (120 F.), preferably with the patient in the knee-chest posture, gives good results. Such irrigations—the so-called return flow enema—are also frequently the sovereign remedy against postoperative gas pains. Hot colonic irrigation is of value to raise low body temperature in collapse. More questionable is the use of cool irrigation as an antipyretic measure. Hot and cold colonic irrigations are also employed to induce vascular and possibly other changes in adjoining organs, such as the prostate or the internal generative organs of the female.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

DIGITALIS DISPERT.—An extract of digitalis, obtained by extraction of digitalis leaves with cold water and evaporation of the extraction by a special process. It is standardized by the minimum lethal dose frog method of Straub (*Arch. f. exper. Path. u. Pharmakol.* **80**:52, 1916-1917) so that 1 Gm. represents 1,900 lethal frog doses.

Actions and Uses.—Those of digitalis. It is the aim of the manufacturer to offer in digitalis dispert the entire water soluble activity of digitalis glucosides closely resembling their state and proportion in the leaf.

Dosage.—0.08 Gm. (1⅓ grains) from three to six times daily. Digitalis dispert is supplied in the form of tablets only.

Manufactured by Krause Medico Gesellschaft m. b. H., Munich, Germany (Schering & Glatz, Inc., New York, distributor). No U. S. patent. U. S. trademark 194,834.

Digitalis Dispert Tablets 0.08 Gm.: Each tablet represents 150 lethal frog doses.

Digitalis dispert is prepared by extracting specially harvested, air-dried, digitalis leaves with cold water by a special maceration process. The solution thus obtained is brought to dryness by a special spray process of evaporation.

Digitalis dispert is a light brown powder of somewhat aromatic odor and bitter taste.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1925, p. 354).

Parke, Davis & Company, Detroit.

Pertussis Immunogen.—A bacterial antigen (ectoantigen) obtained by agitating live pertussis bacilli with physiological solution of sodium chloride and separating the liquid from the organisms; the extract is free or nearly free from bacterial cells and toxin and is preserved with phenol. There is some evidence that this material will yield approximately the same results as the ordinary pertussis bacillus vaccine. Pertussis immunogen is marketed in packages of one 10 cc. vial (*Bio. 315*), each cubic centimeter containing the antigens from 2,000 million of bacteria.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1925, p. 355).

Parke, Davis & Company, Detroit.

Pneumococcus Immunogen.—A bacterial antigen (ectoantigen) obtained by agitating live pneumococci Types I, II and III with physiological solution of sodium chloride and separating the liquid from the organisms; the extract is free or nearly free from bacterial cells and toxin and is preserved with phenol. There is some evidence that this material will yield approximately the same results as the ordinary pneumococcus vaccine. Pneumococcus immunogen is marketed in packages of one 10 cc. vial (*Bio. 305*), each cubic centimeter containing the antigens from 2,000 million of bacteria.

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SATURDAY, JUNE 19, 1926

WATER: ENOUGH, MORE, OR LESS

Three fourths of the protoplasm of the body cells consists of water; the body fluids and secretions are even richer in this substance. After a little consideration, every one appreciates that water plays an important part as a "universal solvent"; at any rate, substances dissolved in it seem to react with greater ease and speed than when dissolved in other mediums. Consequently the physiology and biochemistry of living organisms include prominently the rôle of water. They deal not only with ingested water but also with that formed through the oxidative processes of the body. Thus, there are endogenous as well as exogenous sources of water. Its functions are not merely to act as a medium in which the chemical changes of metabolism occur; water also assists in the removal of waste products and the dissipation of heat. Rowntree[1] has remarked that, in relation to the duration of life, water occupies a position intermediate between food and oxygen; it is more vital than the former, and less vital than the latter.

Medicine is not unfamiliar with the circumstance that some substances which in certain quantities or concentrations may represent a blessing to the body are also liable to produce detriment when they are used in undue abundance. Hydrochloric acid shows its physiologic uses in the gastric functions; but even moderately larger concentrations act as irritants with marked severity. Some of the familiar poisons become wholesome drugs when their intake is reduced to a sufficiently low level.

Even water has its "pathology." Rowntree has described phenomena of what he terms "water intoxication" following introduction of very large amounts of the fluid under certain experimental conditions. In diabetes insipidus, the water balance is set at a level higher than normal. The level can be lowered immediately by the subcutaneous administration of the extract of the posterior lobe of the hypophysis. Subsequent to the use of the extract, the ingestion of water in the large amounts to which the patient has become accustomed results in marked toxicity. Larson, Weir and Rowntree observed patients who developed headaches, nausea, asthenia, incoordination, marked sweating and, in one instance, mild subcutaneous edema under these conditions. These findings are in accord with those of Miller and Williams. Patients with chronic nephritis and hypertension who took water in quantities up to 10 liters a day developed headache, dizziness, restlessness, chills, fulness of the abdomen, vomiting, dyspnea and cramps in the legs, marked increase in weight, and increase in blood pressure. Edema and the collections of fluid in undue quantities in some of the body cavities and tissue spaces represent better known instances of water out of place. Treatment of such conditions, often of a distressing nature, calls for the mobilization and transport of water. Nearly a quarter of a century ago, Widal[2] indicated the importance of a diet low in chlorides for certain cases of nephritic edema. Such a regimen may be followed by diuresis and reduction of the edema. Sometimes more than this is necessary to effect a relief. At the Mayo Clinic, Keith, Smith and Whelan[3] have secured beneficial results in selected patients with edema and ascites by carefully controlled diets low in water content. Many of the common foods of superior nutritive advantage contain considerable water. Deprivation of water in the intake thus may call for skill in dietary selection, particularly when the allowance is to be reduced to a total of 1,500 cc. daily. The possibilities of low fluid diets are likely to receive further detailed consideration in the near future.

1. Rowntree, L. G. The Water Balance of the Body, Physiol. Rev. 2: 116 (Jan.) 1922.

2. Widal, Fernand; and Javal, Adolphe: La cure de déchlorination; son action sur l'oedème, sur l'hydratation et sur l'albuminurie à certaines périodes de la néphrite épithéliale, Bull. et mém. Soc. méd. d. hôp. de Paris 20: 733, 1903.

3. Keith, N. M.; Smith, Florence H., and Whelan, Mary: The Therapeutic Use of Diets Low in Water and in Mineral Content, Arch. Int. Med. 37: 550 (April) 1926.

LIMITATIONS OF COD LIVER OIL IN RICKETS

The discovery that nutritional disorder is the etiologic feature in the development of rickets, and the demonstration of some of the dietary and environmental factors, in contrast to endogenous agencies, concerned in the genesis of rachitic conditions are among the most notable contributions of recent experimental medicine. First of all, the diagnosis of the disorder at all stages has been made more precise through the aid that the newer knowledge of blood chemistry and roentgenologic technic of examination have contributed to the more familiar routine of clinical observation. Secondly, the contributory etiologic rôle of inappropriate or inadequate mineral nutrients in the diet, the effects of deficiencies of vitamin D—the specific antirachitic food essential—and the need of sunlight with its potent radiations in the ultraviolet

region of the spectrum have become recognized. Furthermore, animal experimentation has been successfully called on to contribute to the elucidation of all aspects of the rickets problem.

Incident to this study it has happened that cod liver oil, long recognized as having antirachitic potencies, has been heralded as a veritable specific alike for the prevention and the cure of rickets. The widespread prevalence of this disease and the extremely untoward consequences of its unchecked progress for the person involved have served to give unusual prominence to rickets in the mind of the layman as well as of the physician. Under the unfeigned encouragement of the medical profession, child welfare agencies everywhere have preached the doctrine of the liberal administration of cod liver oil in infancy. The undoubted success in the large reduction of infantile scurvy as the result of educational propaganda has served to spur on the efforts of the promoters of public health. The public has been informed through numerous channels, including even the legitimate lay advertising in the sales promotion of manufacturers. The antirachitic cod liver oil has taken its place with orange juice and other antiscorbutics among the desiderata of children's dietaries.

Of this there can be little criticism. The time has arrived to take account of the hygienic accomplishments of the new procedures in the light of their claims. The importance of such control investigation of newly inaugurated health habits is well illustrated in connection with the efforts at goiter prophylaxis. The relation of the malady to a deficiency of iodine has been clearly established. The preventive and curative effects of small doses have likewise been demonstrated beyond question. But the consequences of undue enthusiasms created by such knowledge and expressed in the universalization of administration of iodine by mass methods are beginning to raise protests on many sides.[1] Hence it may be asked to what extent the promotion of the use of cod liver oil in infancy is on a basis that is defensible from every standpoint. Is it effective? Does it involve possibilities of unsuspected harm? Is it worth while? Should it be modified in any way?

Evidence is already available to suggest that the highest expectations are not consistently realized. The commonest reaction to such reports is to question the dosage or potency of the cod liver oil given. Since it has become possible to standardize the product through laboratory tests, there is less excuse for centering all criticism on the quality of the therapeutic agent employed. Thus, Wilson's[2] study of New York infants, aged from 1 to 3 months, born in the spring and summer of 1924, receiving graduated doses of from one-half to 1½ teaspoonfuls of a biologically tested cod liver oil, revealed the development of clinical rickets in 91 per cent of the subjects. A more intensive study of forty-seven infants, aged from 2 weeks, born in the winter of 1925, receiving daily doses of 1, 2 and 3 teaspoonfuls of biologically tested cod liver oil, showed the development of clinical rickets in 68 per cent of the cases, as compared with 76 per cent of the control series of thirty cases. Ninety-seven per cent of infants born in the summer, and 91 per cent of infants born in the winter who received cod liver oil showed roentgenographic evidence of rickets, as did 97 per cent of the infants born in the summer, and 98 per cent of infants born in the winter who did not receive cod liver oil. There did not seem to be any relation between the degree of rickets observed and the amount of cod liver oil received. Furthermore, a comparison of the degree and incidence of rickets observed in infants receiving and not receiving cod liver oil did not reveal any striking difference. Another significant feature of these New York patients is that the concentration of calcium and inorganic phosphorus in the serum of infants under 5 months of age with early clinical and roentgenographic evidence of rickets was within the normal range. This suggests that perhaps the rickets must be marked and of some duration to show regularly a reduction of the inorganic phosphorus in the serum.

This report, by no means isolated in its findings, must not be received in gloom or allowed to spread discouragement. It was true, even in the New York infants, that those receiving cod liver oil showed rickets that healed earlier than that of the control series. Wilson asserts that the development of rickets in the babies born in winter, in whom preventive cod liver oil therapy was instituted in the first month of life under special supervision, is not easily explained, particularly in comparing the findings with those in the control group. A consideration of the age period when the greatest incidence of rickets was observed, namely, in the fourth and fifth months, suggests that the findings described may be related to the rate of growth, since the rate of growth at this age period is the most rapid in infancy. The rapid growth of the majority of the infants and their general excellent condition may therefore bear some relation to the findings here observed. If the disease described is rickets, Wilson adds, it would seem to be universal in young infants. Her observations were conducted under the limitations imposed by an outpatient clinic; however, one can scarcely expect that this should not be representative of average home conditions among the less well-to-do. It behooves us to consider more seriously than is currently being done whether the inorganic or other food factors aside from vitamin D are not also involved in the rachitic tendencies so widely observed. In the animal laboratory, an ade-

1. Jackson, A. S.: Iodine Hyperthyroidism, Am. J. M. Sc. **170**: 271 (Aug.) 1925. Kimball, O. P.: Induced Hyperthyroidism, J. A. M. A. **85**: 1709 (Nov. 28) 1925. Goiter Prophylaxis, editorial, ibid. **85**: 1971 (Dec. 19) 1925. Hartsock, C. L.: Iodized Salt in the Prevention of Goiter, ibid. **86**: 1334 (May 1) 1926.

2. Wilson, May G.: The Prevention of Rickets, Am. J. Dis. Child. **31**: 603 (May) 1926.

quate intake of well selected mineral nutrients is a potent help in averting rickets. More attention must perhaps be paid not only to dosage but also to the assimilation of cod liver oil. Bloch of Copenhagen has already sounded a warning in this respect. The lesson of recurrent rickets recently taught by Hess[3] indicates the need of unremitting vigilance and persistence in treatment. The unqualified success attained with cod liver oil under carefully controlled conditions of many clinicians should give assurance of the wisdom of its inclusion in prophylaxis. What is needed above all at present, however, is a better understanding of how rickets may be averted in the home as well as in the well ordered clinic.

HUMAN CARRIERS OF TETANUS SPORES

The incidence of tetanus has always been greater in times of war than at other periods.[4] This menace was well realized during the World War, so that prophylactic measures against the disease were widely used. How successful they were is indicated by the statement, for example, that there were 1,450 cases of tetanus among the wounded sent to England during the war, and but for the use of antitetanic serum there would presumably have been 14,000 cases. Practically all mammals are susceptible to tetanus. The etiologic agent, the tetanus bacillus, is found quite frequently in the intestinal contents of herbivorous animals, notably the horse. These animals become responsible for the distribution of the micro-organism through their excreta. Highly manured areas are particularly liable to promote the occurrence of tetanus in soil-contaminated injuries such as war wounds usually represent. The disease may also be transmitted to new-born infants in places where the custom of dressing the severed umbilical cord with earth is followed, or where the dressings that are applied may be contaminated by soil. Tetanus neonatorum remains more common than might be supposed; according to Vaughan there are ten, possibly a hundred, deaths from it for every death from tetanus in soldiers.

The records of a single large state for a period of the last four years show 245 cases of tetanus with a mortality of 67 per cent. The histories in many instances suggest that the infection may have been of fecal origin. The fact that man can act like animals as a carrier of tetanus has long been known. The extent of this possibility has not been fully realized, the general opinion being that only those persons who are in intimate contact with horses are likely to be human carriers of the bacillus. Yet there are records published from many countries, including England and Germany as well as China, that attest the presence of the spore-bearing anaerobe, the tetanus bacillus, in the feces of persons. Thus, in China the surveys by Ten Broeck and Bauer showed that from one fourth to one third of the human fecal specimens examined harbored the micro-organisms.

The first definite results available from larger numbers of persons in the United States have just been recorded by Bauer and Meyer.[5] Out of nearly five hundred specimens from California, one fourth were found positive for tetanus spores. Confirmatory evidences have been secured from various states in sufficient numbers to indicate that other parts of the country are not devoid of human carriers of tetanus. Sex, age and occupation apparently do not play a part in their distribution, nor have atoxic strains of the bacilli been found. The extension of these studies is eminently to be desired; for the evidence that approximately 1 Gm., or 15 grains, of feces from every fourth person in the single state studied contains tetanus spores leads to the conclusion, as Bauer and Meyer believe, that an enormous amount of infectious material capable of producing fatal disease under favorable circumstances is being discharged daily by tetanus carriers. One cannot avoid the suspicion that the human carrier is more or less immune to the type of bacilli that he carries; he is, nevertheless, dangerous to those who are not carriers or who carry other types. Fortunately, the improved methods of sewage disposal tend to remove human dejecta from the possibility of contact with man and from the domain of soil contamination. The ubiquity of fecal bacteria compels us, however, to keep constantly in mind any possibilities of even indirect menace that they may represent—particularly when the Fourth of July threatens.

3. Hess, A. F.: Recurrent Rickets, Am. J. Dis. Child. 31: 380 (March) 1926.
4. Fitzgerald: Tetanus, in Nelson's Loose-Leaf Living Medicine 3: 131, 1920.
5. Bauer, J. H., and Meyer, K. F.: Human Intestinal Carriers of Tetanus Spores in California, J. Infect. Dis. 38: 295 (April) 1926.

Current Comment

REVOCATION OF MEDICAL LICENSES ON TESTIMONY BY DEPOSITION

An obstacle in the way of proceedings to revoke licenses to practice medicine is sometimes the inaccessibility of essential witnesses. Missouri undertook to overcome this obstacle by authorizing the taking of testimony by deposition in the same manner and under the same rules and practice as govern the taking of depositions in civil cases. Such depositions are taken by duly authorized officers, empowered to compel witnesses to appear and testify. The State Board of Health, the licensing body in Missouri, is itself without power to compel the attendance of witnesses and the production of papers by subpena in any case. The constitutionality of such procedure was attacked on the ground that it denies the person whose license is at stake the "due process of law" to which he is entitled under the federal constitution. In a recent case,[6] however, the United States Supreme Court sustained the Missouri

6. State of Missouri ex rel. Hurwitz v. North, — U. S. —; 46 S. Ct. 384; 70 L. ed. 406, decided April 12, 1926.

statute. The license of the plaintiff in error, Leon Hurwitz, was revoked by the state board of health because he had unlawfully produced an abortion. The proceedings were reviewed by the state circuit court and the supreme court of Missouri,[7] but both courts sustained the action of the board. Hurwitz thereupon carried the case to the United States Supreme Court. In affirming the decisions of the courts below and denying Hurwitz the relief he sought, the supreme court pointed out that the accused is afforded due process of law if he is given reasonable notice and reasonable opportunity to be heard, due regard being had to the nature of the proceedings and the character of the rights affected by it. These requirements, said the court, are satisfied by the procedure authorized by the Missouri medical practice act, as that procedure was applied by the state board of health, since—

> The notice prescribed was reasonable. The testimony of all witnesses who appeared before the board was taken and recorded, including that of the plaintiff in error. Although the statute did not authorize the board to issue subpenas, the plaintiff in error was authorized, as the state court held, to take the depositions of witnesses who did not voluntarily appear. Officers who take depositions are authorized to compel witnesses to attend and give testimony. The depositions, when taken, may be read at the hearing before the board. The procedure prescribed and followed here gave ample opportunity to plaintiff to make a defense to the charges preferred and there was no denial of due process.

The decision is important in that it points a way to simplify proceedings looking toward the revocation of licenses. If the law of a state already authorizes the taking of testimony by depositions, the licensing board can now proceed more confidently than before. If, however, the state law does not authorize the taking of testimony in this way, it may well be amended to accomplish that end. Otherwise, the difficulty and expense of procuring the attendance of witnesses will continue, as at present, a serious obstacle to the revocation of licenses that ought to be revoked.

THE HEALTH NEEDS OF NEW YORK

New York is one of the greatest municipalities in the world. It is significant, therefore, to learn how a committee of physicians, giving special study to its conditions, visualizes the health problems of such a community. The Public Health Committee of the New York Academy of Medicine has recently summarized the problems facing the city with regard to its health needs as follows: decentralization of population and better housing conditions; strengthening of the sanitary safeguards in food and milk production and distribution; adequate sewage and garbage disposal; systematic development of health education based on sound principles; supervision and control of occupational hazards; extension of outdoor recreational facilities, and suppression of obnoxious and deleterious odors, dust and the smoke nuisance.[8] The absence of direct reference to active disease, epidemics and other bacterial menaces should not be interpreted as indifference to such factors. Disease control is a well recognized aspect of public health control. Indeed, the New York committee has given prominence to the baffling nature of some of the communicable diseases of the central nervous system and has suggested the organization of a commission for the study of the etiology, pathology and epidemiology of these. It has also called attention specifically to the inadequate control of whooping cough, which stands as the third highest cause of death among the acute infectious diseases. But the attempted education of a municipality to make budgetary appropriations in the direction of personal prophylaxis and preventive hygiene shows how far the medical profession has traveled toward disease prevention. In many respects the physician is necessarily an individualist. Stryker[9] has insisted that no friend of the medical profession could bemoan this or wish to change it. And yet, he adds, there are times when the individual physician, oppressed by the manifold duties and responsibilities which flow from the high calling which he follows, is prone to forget that the attainment of the great ends to which he has dedicated his life—the safeguarding and protection of the public health—can best be served by combined action rather than by working alone. The altruistic efforts of the Public Health Committee of the New York Academy of Medicine indicate how well our profession can serve in this respect.

PROTECTING THE PUBLIC IN MISSOURI

Apparently, the public and the medical profession of Missouri are finding the cleaning of their Augean stables of medical licensure a difficult task. The situation reveals again the unholiness of any alliance between public health and politics, and even more, the difficulty of divorcement when such an alliance is once perpetrated. In his presidential address before the Missouri State Medical Association recently, Dr. Emmett P. North made an impassioned plea for a final fumigation so that Missouri may make a clean start. He called attention to the weakness of the medical practice act, and to the facts that Missouri has three out of six of the nonreputable schools in the United States, that there is an apparent reticence on the part of the newly established state board of health to take any drastic action against recognized offenders, and that the time is ripe for all persons interested in honest medical practice to unite on a medical practice act which will serve to protect the public. In the *Missouri State Medical Journal* for June, the editor, Dr. E. J. Goodwin, enforces the statement of Dr. North, and in the name of the organized medical profession calls on the newly established state board of health to organize officially, to revoke licenses obtained through fraud, and specifically to prosecute vigorously the revocation of license of Dr. R. B. Horton, whose record in relation to the licensure scandals in Missouri has appeared both in medical periodicals and in the public press. The insinuation has been made repeatedly that medical licensure in Missouri has been, and is, closely linked with the general conduct of state

7. Validity of Proceedings for Revocation of License, J. A. M. A. 84: 1073 (April 4) 1925.
8. The New York Academy of Medicine Public Health Committee Report for the year 1925.
9. Stryker, L. P., cited in A. M. A. Bull. 21: 121 (May) 1926.

affairs, and that the governor of the state has not been above mingling in these matters to the interest of those who have sought and to whom he has owed political preference. The recognition and rewarding of those who aid our office-holders to high positions is not an unusual feature of county, state, or even national American politics. However, most of the great statesmen of all time have recognized that the care of the public health is the first interest of the state. The unqualified, incompetent, dishonest practitioner, licensed to practice by the state and practicing his type of medicine while skulking in the shadows of legal recognition, is a greater menace to public health than the nostrum vender or the forthright charlatan. If the members of the state board of health of Missouri are sincere in their wish to fulfil honorably the positions to which they have been appointed and to protect the public against unqualified practitioners, they will not hesitate to take up the challenge issued by the officers of the state medical association, and to prosecute to the utmost such obvious offenders as have been called to their attention.

WHAT ABOUT YOU?

This month, an information card is being sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. On it, the recipient is asked to place certain information to be used in compiling the tenth edition of the American Medical Directory, which is now being prepared in the biographic department of the Association. The directory has assumed a place of importance in American medical life and has established itself as one of the most significant of the altruistic efforts of the Association in the interest of the medical profession and for the protection of the public. In it, as in no other published directory, may be found dependable data concerning physicians, hospitals, organizations and medical activities. Physicians who receive the card are asked to fill it out and return it promptly to this office, whether or not any change has occurred in the information specified. Should the reader fail to receive the card before the first of August, he will aid by writing to the headquarters office, stating that fact and indicating whether or not any change is to be made in the information published in the current issue of the directory.

Cost of Public Health Nursing.—In the large cities surveyed in 1924 by the U. S. Public Health Service, the municipal expenditures for public health nursing varied from 1.5 cents to 36.6 per capita, with an average of 15.4 cents, as compared to 9.5 cents for the same group in 1920. It is evident that such an expenditure falls far short of the average cost per capita of 83 cents proposed in the "ideal" plan. It should be remembered, however, that this plan included the cost of private as well as official nursing, and that the figures for the 1924 surveys include only the municipal service. It should be noted that the estimate of 83 cents per capita is equal to or greater than the sum which is now being expended for all strictly health work by many cities, including nursing services. This does not mean that the estimate for nursing is high, but that the expenditure for health work is low.—Cumming, Hugh: *Pub. Health Rep.* **41**:380 (Feb. 26) 1926.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CONNECTICUT

Memorial to Beaumont.—A memorial will be unveiled at Lebanon, Conn., June 29, to Dr. William Beaumont, the pioneer American physiologist and distinguished member of the U. S. Army Medical Corps. Dr. Beaumont was born in Lebanon, Nov. 21, 1785, and made most of his observations on Alexis St. Martin, a Canadian, who suffered a permanent gastric fistula, following an accidental gun-shot wound. The Michigan Medical Society, to which Beaumont reported his studies in 1827, erected a monument on Mackinac Island near the spot where these immortal studies were begun. Lafayette B. Mendel, Ph.D., Sterling professor of physiologic chemistry, Yale University Medical School, is president of the Beaumont Medical Club.

Clinical Congress of State Society.—The second clinical congress of the Connecticut State Medical Society will be held in Sprague Memorial Hall, Yale University, New Haven, September 21-23. There will be nineteen papers presented, a round table discussion on periodic health examinations the first evening, and a smoker at the New Haven Lawn Club the second evening. The university has assigned a dormitory for the use of the congress, where rooms at $1.50 per night may be secured; if hotel accommodations are preferred, reservations should be made directly with the hotel. The university dining hall will be in operation, and luncheon will be provided for members without extra charge. Twenty-four hour telephone service will be maintained so physicians may be kept in touch with their offices. Among those who have accepted invitations to speak are Dr. John Shelton Horsley, Richmond, Va.; Dr. Hugh Cabot, Ann Arbor, Mich.; Drs. Henry A. Christian and Charles F. Painter, both of Boston; Drs. Edward L. Hunt, New York; Arthur C. Christie, Washington, D. C.; Robert B. Osgood, Boston; John O. Polak, Brooklyn, and Roger H. Dennett, New York. There will be a fee of $10, which includes admission to all sessions, the luncheons, smoker, parking space and garage, and a copy of the abstracts of papers presented. Inquiries should be addressed to Dr. Creighton Barker, 129 Whitney Avenue, New Haven.

FLORIDA

State Medical Election.—Dr. Henry Mason Smith, Tampa, was elected president of the Florida Medical Association at the recent annual meeting in Gainesville; Drs. Frederick J. Waas, Jacksonville, James Maxey Dell, Gainesville, Arthur G. Fort, Miami, vice presidents, and Dr. Shaler A. Richardson, Jacksonville, secretary-treasurer (reelected). The next meeting will be at West Palm Beach.

Midwives Fined.—The state board of health notes that Nettie Troublefield, Miami, was fined $54.84, April 8, for practicing midwifery without a certificate from the city department of health, and that Druscilla Edden was fined $29.85 at Miami, March 23, "for attempting to practice a certain branch of medicine on a patient after having been refused a certificate to practice midwifery."

GEORGIA

University News.—The University of Georgia conferred the degree of doctor of medicine on twenty-three graduates of the medical school, May 31, among whom was Loree Florence, who, according to the Augusta *Chronicle*, is the first woman to receive the degree of doctor of medicine from the University of Georgia. Following a meeting of the board of directors of the medical college, the resignation of Dr. Eliot R. Clark, professor of anatomy, was announced; Dr. Clark goes to the anatomy department of the University of Pennsylvania School of Medicine, Philadelphia.

Alumni Week Clinics.—The state board of health, cooperating with the School of Medicine of Emory University and the U. S. Public Health Service, conducted clinics and lectures, June 7-11, devoting the afternoons especially to venereal disease, when graduate physicians were given an opportunity to assist in the treatment of patients. Atlanta hospitals kept "open house," and physicians over a large territory were

invited to be present. A complimentary dinner was given by the Atlanta Alumni of Emory University. There were also surgical and medical clinics, clinicopathologic conferences, and symposiums. This postgraduate study was the seventh annual institute-clinic on venereal diseases of the state board of health in cooperation with the Public Health Service.

ILLINOIS

Society News.—Dr. Herman L. Kretschmer, Chicago, addressed the Sangamon County Medical Society, Springfield, June 3, on "Urology and Its Relation to General Medicine and Surgery," illustrated by lantern slides.——The Illinois State Medical Society, at its recent annual meeting, established a section of radiology. There are now said to be five state societies which have sections of radiology—Wisconsin, Texas, Massachusetts, Louisiana and Illinois.——Dr. Gustaff H. Mundt, Chicago, president-elect of the Illinois State Medical Society, addressed the Vermilion County Medical Society, June 1, on "The Value of a Medical Society to the Physician."

Chicago

University News.—Graduates of Rush Medical College had contributed $230,000 up to June 5 toward the alumni quota of $2,000,000 in the University of Chicago's endowment drive; their self-made goal is $250,000. Graduates of Rush in forty-one states, three territories and five foreign countries have subscribed; 500 Rush Alumni in Chicago gave $124,475.

Society News.—The last meeting of the year of the Chicago Council of Medical Women will be June 22, at the Men's City Club, 315 Plymouth Court. Dinner at 6:30 p. m. at $1.50 per plate will precede the meeting; the chief speaker will be Dr. Georgine M. Luden, an associate in the research department of the Mayo Clinic, Rochester, Minn.; the other guest of honor and speaker will be Dr. Bertha Van Hoosen.——Dr. Isaac A. Abt was elected president-elect of the Chicago Medical Society, June 15, and Dr. Frank R. Morton, secretary.

Summer Clinics at Cook County Hospital.—Under the auspices of the Chicago Medical Society, the staff of Cook County Hospital will give two courses of two weeks of clinics, July 19-31 and August 1-14. There will be no fee and no diplomas given, and admission will be by card only, which will be sent to those who register early in reply to more than 10,000 letters mailed by the Chicago Medical Society to physicians in the state. The number which can be accommodated is limited. The clinics will cover general medicine and surgery and many of the specialties.

Personal.—Dr. Frank Billings received the honorary degree of doctor of science at the commencement exercises of Northwestern University, June 14.—A dinner dance, under the auspices of the North Side Branch of the Chicago Medical Society, was given at the Edgewater Beach Hotel, June 12, in honor of Dr. Charles J. Whalen, a former president of the Chicago Medical and the Illinois State Medical societies.——Dr. William Allen Pusey, formerly President of the American Medical Association, gave the commencement address at the University of Illinois School of Medicine, June 12.——Dr. John Ridlon received the honorary degree of doctor of science at the commencement of Tufts College, Boston, June 14.——The honorary degree of doctor of science was conferred on Dr. Frank Smithies by Washburn College, Topeka, Kan., June 2.——Dr. Bertha Van Hoosen recently received the honorary degree of LL.D. from Loyola University.

LOUISIANA

University News.—The senior class of Tulane University of Louisiana School of Medicine, New Orleans, June 8, presented to the school a portrait of Dr. Rudolph Matas, professor of surgery, which was painted by Harry Armstrong Nolan.

Supreme Court Refuses Chiropractors' Writ.—Having been sentenced by Judge Byrnes, New Orleans, to ten days in jail and a fine of $50 for practicing chiropractic in violation of an injunction issued by the court two years ago, Walter W. and Joseph B. Fife appealed to the state supreme court for a writ to restrain the judge from enforcing the sentence. The supreme court refused, May 12, to issue the writ. This is said to be the second time the Fife brothers have been punished for contempt of court (THE JOURNAL, July 7, 1923).

House Passes "Hospital Abuse Bill."—The lower house of the state legislature passed a bill, June 3, which would require each applicant for admission to the charity hospitals in New Orleans and Shreveport, except in cases of immediate emergency, to fill out blanks to show whether the applicant is able to pay. The bill provides that an applicant who is able to pay for his care and treatment shall be rejected, and that if after such patient has been admitted it is found that he misrepresented his financial condition, he will be subject to prosecution.

MARYLAND

Personal.—Dr. Susanne R. Parsons of the Baltimore City Health Department has resigned, effective, June 15.——H. A. B. Dunning, Baltimore, has been awarded the Remington Honor Medal of the New York Branch of the American Pharmaceutical Association for successfully directing the campaign to raise $1,000,000 for a headquarters building for the national pharmacy association.——Dr. Charles W. Maxson, Baltimore, was elected president of the Alumni Association of the Medical Department, University of Maryland, at the recent annual meeting in Baltimore.

Hospital News.—Largely with funds left by Mrs. Helen Turner, a building will be erected for the James Lawrence Kernan Hospital and Industrial School for Crippled Children, and six beds at the Eudowood Sanatorium will be provided. The new building at Kernan's Hospital will be especially equipped to treat diseases of the spine and bones; construction will start this summer. Mrs. Turner bequeathed about $80,000 to each institution, which will be increased to about $100,000 on the death of certain life tenants. About $45,000 has been raised from other sources to help pay for the new building.

MICHIGAN

Postgraduate Conference.—A postgraduate conference was held in Michigan at Alpena, May 6, to which some physicians traveled as far as 250 miles; every resident physician of Alpena was present, and the parent teacher association and the Rotary Club participated in the program of the conference. Three hundred other citizens attended the meeting. Dr. William H. Marshall, Flint, spoke on "Physical Examination with Demonstration," and Dr. Walter H. MacCraken, dean and professor of pharmacology and therapeutics, Detroit College of Medicine and Sugery on "Advances in Therapeutics." Following the program, there were dancing and light refreshments.

Personal.—Dr. Albert C. Kerlikowske has been appointed chief resident physician at the University Hospital, Ann Arbor.——Dr. Silas B. Frankhauser has been elected mayor of Hillsdale.——Dr. Roy C. Perkins has been elected chief of staff of Mercy Hospital, Bay City.——Dr. James H. Dempster, Detroit, has been elected president of the Wayne County Medical Society for the ensuing year.——Dr. S. Rudolph Light has been elected president of the Kalamazoo County Tuberculosis Association.——Dr. Gertrude O'Sullivan has resigned as city health officer for Port Huron.——Dr. Hugh Cabot, dean and professor of surgery, University of Michigan School of Medicine, Ann Arbor, took charge of Sir Holburt Waring's surgical clinic at St. Bartholomew's Hospital, London, England, from May 31 until June 12, and during that time, according to the *Lancet*, delivered two lectures at the medical school on "Nontuberculous Infections of the Kidneys," another on "The Present Position of Prostatic Surgery," and another on "Tuberculous Disease of the Kidney."

MINNESOTA

Personal.—Dr. Alfred E. Comstock, St. Paul, has been elected secretary of the state board of medical examiners to fill the vacancy caused by the death of Dr. Thomas McDavitt; the office of the secretary has been moved to 636 Lowry Building, St. Paul.——According to the *Journal-Lancet*, Dr. Walter L. Taft will be a candidate for the office of city coroner of Minneapolis; Dr. Frederick H. Rollins, St. Charles, is a candidate for the state senate.

New Hospital in Midway District.—The Northwestern Hospital Association is constructing a $750,000 hospital on an eight acre tract in the Midway District between St. Paul and Minneapolis which, it is expected, will be ready for occupancy, August 1; construction work started last July. The building is fireproof and in other respects of the most modern type of construction. The Northwestern Baptist Hospital Association, which began its work twenty-one years ago, when the Mounds Park Sanatorium, St. Paul, was opened, now cares for about 3,500 patients annually and its free service to the sick has increased in proportion to its growth.

Society News.—The Minnesota Academy of Ophthalmology and Oto-Laryngology elected Dr. John L. Shellman, St. Paul,

president, May 14; Drs. Walter E. Camp, Minneapolis, and Frank N. Knapp, Duluth, vice presidents, and Dr. John H. Morse, Minneapolis, secretary-treasurer.——Dr. George E. Fahr, Minneapolis, was elected president of the Minnesota Pathological Society, May 11; Dr. Wallace H. Cole, St. Paul, vice president, and Dr. Elexious T. Bell, Minneapolis, secretary-treasurer.——Drs. William J. and Charles H. Mayo, Rochester, addressed the annual meeting of the American Surgical Association, Detroit, May 24-26, on "Rehabilitation of the Surgical Patient Through Biochemical Methods" and "The Gallbladder of 1926," respectively.

NEW HAMPSHIRE

State Medical Election.—At the one hundred and thirty-fifth annual meeting of the New Hampshire State Medical Society, Concord, May 26, Dr. David W. Parker, Manchester, was elected president; Dr. Emery M. Fitch, Claremont, vice president; Dr. Dennis E. Sullivan, Concord, secretary-treasurer (reelected), and Dr. Joseph J. Cobb, Berlin, speaker of the house of delegates. Dr. Thomas W. Luce, Portsmouth, is the retiring president. The next meeting will be held at Portsmouth in 1927.

NEW JERSEY

Hospital News.—Citizens of Princeton launched a campaign, June 1, to raise $600,000 for a new Princeton hospital, the capacity of which will be fifty-six beds. The first day of the drive for a community hospital netted more than $140,000; the largest donation was $37,500, by George A. Armour and family, for an operating room; Mr. and Mrs. Gerard B. Lambert gave $24,000; two children contributed all they had in the bank, a total of twenty-eight cents; an anonymous gift of $6,000 was made in memory of Isabella McCosh, wife of a former president of the university, in whose honor the university infirmary is named.——The cornerstone of the new $300,000 Dover General Hospital was laid, April 25.——The Presbyterian Hospital, Newark, is conducting a campaign for $450,000 for a new building.——The Dr. E. C. Hazard Hospital, Long Branch, is building a $75,000 addition.

Illegal Practitioners in Court.—The following persons have recently been brought into court charged with practicing medicine, chiropractic or midwifery without a license:

Albert H. Smith, a druggist, Bradley Beach (fined).
J. Harry Hayes, a druggist, Asbury Park (fined).
Ferdinand Boutel, formerly of Elizabeth (fined).
James C. Van Middlesworth, Elizabeth (fined).
Lillian Carter, Camden (committed to jail for twenty days).
George Schaefel, Oaklyn (fined).
Mary Jergufski-Hammon, a midwife, Trenton (fined).
Anna Falcone, a midwife, Passaic (fined), for practicing midwifery without a license.
Carmela Suco, Passaic, committed to jail for sixty days.
Henry P. Livesey, Arlington, a licensed chiropractor who was practicing electrotherapeutics in connection with the practice of chiropractic (fined).
Margaret Lehman, Trenton (fined).
Edward E. Garlits, proprietor of a health food store, Trenton (fined).
Herman North, Bloomfield, a druggist (fined).
Anna Antolik, Whippany, an unlicensed midwife, and Anna Kudelka, Boonton, an unlicensed midwife, and Adolph Schror, Rockaway Valley, were each tried for practicing medicine without a license, and judgment entered for the penalty and costs, but each filed notice of an appeal.

NEW YORK

Control of Venereal Disease.—The director, division of social hygiene, state department of health, summarizes the activities in New York, exclusive of New York City, for the control of venereal disease from 1919 to 1925. He says, there were 4,383 lectures attended by 509,869 persons, and 3,241,576 pamphlets distributed, and 32,089 patients who were unable to pay for medical attention treated at the free clinics. There were 28,777 cases of syphilis in New York last year. There are ninety-one laboratories approved for the examination of "smears," sixty-seven laboratories approved for dark field examinations for syphilis, and thirty-eight laboratories approved for performing the Wassermann test. There were examined during this period (1919-1925) 174,876 smears for gonococci, and 1,374,460 Wassermann tests made. The physicians, the public and the state are cooperating to control these diseases.

Society News.—Dr. William H. Ross, Brentwood, addressed the semiannual meeting of the Suffolk County Medical Society, Patchogue, May 18, on "The Influence of Diet in Chronic Arthritis," and Dr. Blake F. Donaldson, New York, held a clinic on nephritis.——Dr. Frederick C. Conway addressed the Medical Society of the County of Albany, June 8, on "Case of Pericarditis with Effusion"; Dr. Stanley E. Alderson, on "Case of Perforated Duodenal Ulcer"; Dr. Otto A. Faust, on "Case of Lung Abscess"; Dr. E. Martin Freund, on "Two Cases of Bronchial Asthma"; and Dr. John E. Heslin, on "Hematuria in the Male." The members of this society are invited to a clam-bake, June 24, given by the Berkshire District Medical Society at Pontoosac Lake, Pittsfield, Mass. ($5 per ticket). Ladies also are invited. There will be golfing and tennis.——At the first annual meeting of the Genesee County Medical Association, June 4, the guest of honor and chairman was Dr. Clement R. Jones, Pittsburgh, treasurer of the American College of Physicians; Dr. John Phillips, Cleveland, addressed the society on "Abdominal Conditions Which Are Essentially Nonsurgical"; Dr. Charles Gordon Heyd, New York, on "Differential Diagnosis of Surgical Conditions of the Upper Abdomen," and Dr. Ernst A. Pohle, University of Michigan School of Medicine, Ann Arbor, on "Therapeutic Use of Radiation with Special Consideration of Ultraviolet Therapy." Following the scientific meeting, there were golfing, tennis, hiking and swimming, and in the evening a dinner dance.

New York City

Society News.—About 100 physicians and guests attended the annual dinner dance of the Three Hundred and Second Medical Regiment at the Hotel Bossert, May 22.——The trustees of the New York Academy of Medicine and members of the public health committee gave a testimonial dinner to Dr. Charles L. Dana on the occasion of the fifteenth anniversary of the formation of the committee of which Dr. Dana is chairman.

Travel Study Club.—The Travel Study Club of American Physicians left for an eight weeks tour of Europe, June 12, to visit Norway, Sweden, Denmark, Germany, Switzerland, France and England. Ten days will be spent in Germany at Cologne, Düsseldorf, Neuenahr, Wiesbaden, Heidelberg and Baden-Baden, where special receptions and banquets will be given by the Kur-Administrations and their German colleagues. Dr. Louis L. Seaman is president of the club, and Dr. Richard Kovacs, secretary-treasurer.

Committee on Maternal Health.—Organized in 1923 to make a scientific investigation of contraception, sterilization and problems of sterility and fertility from a medical and public health point of view, the Committee on Material Health has undertaken a clinical study of contraception, in which eight hospitals are cooperating. The clinical work aims (1) to provide medical service for women who need advice about contraception, to cure or prevent disease as permitted under the state law; (2) to collect evidence as to conditions under which advice for or against pregnancy should be given and, (3) to collect histories of patients who use contraceptive methods under medical supervision. The committee, which offers an honorarium in order to secure complete histories, aims to keep patients under supervision for at least one year, and strictly limits itself to advising patients who present medical indications. It is expected that the study of these histories will help answer, scientifically, such questions as "What are the physiologic and psychologic effects of contraception on the individual?" "What are the effects of contraception on subsequent fertility?" and "What are the relative values of contraceptives as to reliability, simplicity and harmlessness?" The committee also aims to promote research on problems of sterility and fertility. Reports will be issued to the medical profession from time to time; a great deal of opinion on these questions through interviews in Europe and America, has been collected, but the opinions differ widely, and an unbiased investigation is being made of the facts. The medical members of the committee are Drs. Samuel W. Lambert, chairman; Robert L. Dickinson, secretary; Haven Emerson, Robert T. Frank, Frederick C. Holden, George W. Kosmak, James Pedersen and William F. Snow; the office is at 370 Seventh Avenue.

NORTH CAROLINA

Hospital News.—More than $80,000 had been obtained at last report in the campaign to raise $100,000 for the erection of a hospital for negroes at Greenboro.——Haywood County approved, June 5, a bond issue of $100,000 to establish a county hospital in the county seat, Waynesville.

Initial Payment by Duke Foundation.—The Duke Endowment Headquarters at Charlotte mailed checks recently to hospitals not operated for private gain and to orphanages in North and South Carolina, amounting to $267,912.95. This was the initial instalment of payments (THE JOURNAL, Dec. 20, 1924, p. 2027).

Personal.—Dr. George Fletcher Reeves, Winston-Salem, has been elected full-time health officer for Nash County, and

will take up his duties, July 1.——Dr. Vincent W. Archer, formerly of Black Mountain, who has been elected professor of roentgenology in the Medical School of the University of Virginia, will assume charge of that department at the opening of the fall term.

Four Months on the Road Gang.—About twenty-five negroes were witnesses in the trial of William Lowery, a Croatan Indian, in the superior court at Clinton, May 13, who was charged, it is reported, with practicing medicine without a license. Lowery is said to have traveled about the community selling medicines prepared by himself and offering to cure various ailments for a certain sum of money. Judge Bond sentenced the "doctor" to serve four months on the county roads.

OHIO

Society News.—Drs. Preston M. Hickey, Aldred S. Warthin and Frank N. Wilson of the University of Michigan Medical School, Ann Arbor, held "A Pathologic and Roentgenologic Conference on Proved Cases" before the Academy of Medicine of Toledo and Lucas County, Toledo, June 4.——Dr. Karl D. Figley, Toledo, addressed the Sandusky County Medical Society, Fremont, May 20, on "Periodic Health Examinations."——The Montgomery County Medical Society was the guest, on the occasion of its annual meeting, of Dr. Charles B. Rogers at the Orchard Springs Sanatorium, near Dayton; Dr. Max Ballin, Detroit, addressed the society on "Abdominal Diagnosis and Surgery."——Dr. Henry Kennon Dunham of the University of Cincinnati College of Medicine addressed the Columbiana County Medical Society, East Liverpool, June 10, on "Importance of Exact Diagnosis and Classification of Lung Lesions."

Personal.—Dr. Charles H. Pelton has resigned as superintendent of the Memorial Hospital, Elyria, and Mr. John Mannix, of Mount Sinai Hospital, Cleveland, has been appointed superintendent.——Dr. Eli R. Crew, superintendent, Miami Valley Hospital, Dayton, was chosen president elect of the Ohio Hospital Association at the recent annual meeting in Columbus.——Mr. A. G. Stouder, Troy, recently gave $200,000 to that city for the erection of a memorial hospital to be known as the Stouder Memorial.——A dinner in honor of Dr. John N. Lenker, Cleveland, was given, May 21, by the staff and trustees of St. Luke's Hospital; Dr. Lenker, who has been associated with this hospital for twenty-five years, had just returned from an extended trip around the world.——Dr. Benjamin A. S. Stephenson, Columbus, has been elected health officer of Hocking County and the city of Logan, to succeed Dr. William G. Rhoten, who has accepted a position as health officer of Wayne County.——Dr. William H. Eastman, Fredericktown, was elected president of the Knox County board of health at the annual business meeting, June 1.

PENNSYLVANIA

Mental Clinics.—Regular mental clinics were recently established in Clearfield and Venango counties, and occasional clinics in the public schools of Pike County and at the Brookville Red Cross. There are now forty-six regular mental clinics being conducted under the auspices of the bureau of mental health of the state department of welfare, and five occasional mental clinics.

Society News.—Dr. John B. Deaver, Philadelphia, addressed the Newcastle County Medical Society, May 18, on "Peritonitis."——Dr. James M. Anders addressed a joint meeting of the Montgomery County Medical Society and the local tuberculosis society, Norristown, June 2, on "Disease Prevention, with Especial Reference to Tuberculosis."——Dr. Thomas M. Mabon addressed the Allegheny County Medical Society, Pittsburgh, June 15, on "Myxedema" (lantern slides); Dr. Harvey E. Thorpe, "Slit Lamp Microscopy of the Living Eye," and Dr. Isaac L. Ohlman, "A Nonboiling Method of Sterilizing Syringes for Intravenous Work."

Philadelphia

Hospital News.—The $1,000,000 drive to enlarge the Bryn Mawr Hospital was oversubscribed, the grand total being $1,275,984, which does not include thousands of dollars given for memorials.

Dr. Sweet Goes to Cornell.—Dr. Joshua E. Sweet, who has conducted the department of surgical research at the University of Pennsylvania for twenty years, has accepted the chair of surgical research at Cornell University Medical College, New York; a dinner was given, June 5, in honor of Dr. Sweet; Dr. George M. Dorrance presided, and Drs. William Pepper, George W. Norris, Edward B. Krumbhaar and De Witt C. Guthrie were among the speakers.

Health Talks for the Public.—Under the auspices of the Philadelphia County Medical Society, addresses were delivered in the auditorium of the society's new home, Twenty-first and Spruce streets, by Dr. Wilmer Krusen, director of health, June 8, on "Health Problems of a Great City," by Dr. Frank C. Hammond, dean, Temple University School of Medicine; June 15, on "The Social Evil" (for men only), and by Dr. Harriet Hartley, June 15, on "Some Phases of Hygiene" (for women only).

Woman's Medical College.—At the seventy-fourth annual commencement of the Woman's Medical College of Pennsylvania, June 9, twenty-nine women received the degree of doctor of medicine; the commencement address was given by Dr. John A. Lichty, superintendent, Clifton Springs Sanatorium, Clifton Springs, New York. Following the commencement, a bronze tablet was unveiled in honor of Dr. Anna S. Kugler, '79, and Dr. Lydia Woerner, '99, both of whom spent many years in India as medical missionaries. The Lutheran Women's League of Philadelphia and vicinity presented the tablet together with two scholarships of $5,000 each, to provide for the training of medical missionaries. Ten of this year's graduating class expect to serve as medical missionaries in widely scattered foreign posts. During the annual meeting of the alumni association, June 10-11, there were scientific demonstrations and clinics, a banquet at the Bellevue-Stratford Hotel, business meetings, luncheons, and a visit to the proposed site of the greater Woman's Medical College, Henry Street and Abbottsford Road, Falls of Schuylkill.

RHODE ISLAND

Hospital News.—The Miriam Hospital, Providence, which was opened to the public last November, has opened an outpatient department with clinics in internal medicine, gynecology, surgery, diabetes, eye, ear, nose and throat and prenatal work.

State Medical Election.—At the one hundred and fifteenth annual meeting of the Rhode Island Medical Society, Providence, June 3, Dr. Herbert G. Partridge, Providence, was elected president; Drs. Norman M. MacLeod, Newport, and Arthur H. Harrington, Howard, vice presidents; Dr. Jesse E. Mowry, treasurer, and Dr. James W. Leech, 369 Broad Street, Providence, secretary. The principal speaker at the annual banquet was Charles U. Clark, Ph.D., Quebec, Canada. Dr. Charles L. Scudder, Harvard University Medical School, Boston, spoke at the morning session on "Operative Treatment of Fractures," and Dr. Howard E. Blanchard, Providence, on "Corrective Rhinoplasty," illustrated by moving pictures, through the courtesy of Dr. Joseph Eastman Sheehan, New York; at the afternoon session there was a symposium on "Cancer" by members of the staff of Memorial Hospital, New York.

TENNESSEE

Medical School Adopts Quarter System.—It is reported that the trustees of the University of Tennessee have adopted the quarter system whereby by continuous study the two premedical and four medical years of work can be completed in as short time as four and a half years. Under this system, any three quarters will be considered the equivalent of one college year.

Health at Nashville.—Telegraphic reports to the U. S. Department of Commerce from sixty-four cities with a total population of about 29,000,000, for the week ending May 22, shows the highest mortality rate for Nashville (21.3), and a mortality rate for the group of cities of 13.3. In the corresponding week last year the mortality rate for Nashville was 18.4, and for the group of cities, 12.9. The annual rate for the sixty-four cities for the twenty-one weeks of 1926 was 15.5, while for the corresponding period last year it was 14.2.

Society News.—At the sixty-third semiannual meeting of the Middle Tennessee Medical Association, Springfield, May 21, Dr. Thomas D. McKinney, Nashville, was elected president; Dr. William W. Porter, Springfield, vice president, and Dr. Sam P. Bailey, Nashville, secretary-treasurer, reelected. The next meeting will be held at Dickson.——At the thirty-fifth annual meeting of the West Tennessee Medical and Surgical Association, Dr. Richard M. Little, Martin, was elected president; Dr. William C. Duckworth, Jackson, vice president; Dr. Isaac A. McSwain, Paris, secretary-

treasurer, reelected, and Dr. George R. McSwain, Paris, assistant secretary. The next annual meeting will be at Dyersburg.

WASHINGTON

Hospital News.—The Oakhurst Tuberculosis Sanatorium at Elma will construct a $50,000 hospital for male patients.——Brig. Gen. Frank T. Hines has ordered the construction of an infirmary building for the tuberculous patients at the Veterans' Bureau Hospital, Walla Walla.

Personal.—Dr. Edward J. Lawrence, Spokane, has been elected president of the University Club of that city.——Dr. and Mrs. George S. Allison, Spokane, recently celebrated their golden wedding anniversary.——Dr. Frances R. McLoughlin, Seattle, has been appointed, by the governor, to the state institutional board of health.

Osteopaths Want to Prescribe Narcotics.—Having been refused registration under the Harrison Narcotic Act, by the collector of internal revenue, certain osteopaths of the state petitioned for, and received, a writ of mandamus directing the internal revenue collector to register one W. E. Waldo, Seattle, before June 21, or show cause in court for failing to comply. The state law, known as the Beeler Act, prohibits the possession, sale and use of narcotic drugs, except by "physicians, dentists, surgeons and veterinarians," and, in the opinion of the assistant state attorney general, osteopaths are not included in the excepted classification. The osteopaths have not only been refused registration under the state law, but have been called on to turn in at once all narcotic drugs they may have in their possession.

WEST VIRGINIA

Personal.—Drs. Robert J. Reed and Frank LeMoyne Hupp, both of Wheeling, received the honorary degree of doctor of science from Washington and Jefferson College, Washington, Pa., June 16.——Dr. Garner Scullard, Pittsburgh, has been appointed pathologist at the Ohio Valley General Hospital, Wheeling.

State Medical Election.—At the recent annual meeting of the state medical association, Morgantown, Dr. Chester R. Ogden, Clarksburg, was elected president; Drs. Charles B. Wylie, Morgantown, Claude A. Frazier, Powellton, and Edmund L. Armbrecht, Wheeling, vice presidents; Dr. Thomas Maxfield Barber, Charleston, treasurer, and Mr. Sterrett O. Neale, Charleston, executive secretary. The next annual meeting will be in White Sulphur Springs.

Society News.—Dr. Hanson S. Ogilvie, Charleston, recently addressed the Mercer County Medical Society, Bluefield, on "Simple Diagnostic and Therapeutic Principles in Neurology."——Dr. Charles H. Clovis, Wheeling, has been elected president of the Ohio County Medical Society, and Dr. John W. Gilmore, Wheeling, vice president; Dr. Walter D. Wise, Baltimore, recently addressed the society on "A Plea for Earlier Operation in Surgical Conditions of the Biliary Tract."——The Upshur County Medical Society was reorganized in May, and Dr. Everett Walker, Adrian, was reelected president; Dr. Lowry W. Page, Buckhannon, vice president, and Dr. Leonard W. Deeds, Buckhannon, secretary.

WISCONSIN

Personal.—An award of $25,000 has been approved by the Mixed Claims Commission, representing the United States and Germany, to the widow of Dr. Edmund F. Woods, Janesville; Dr. Woods lost his life when the *Arabic* was sunk by a German submarine off the coast of Ireland, Aug. 19, 1915.

University News.—Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, addressed the University of Wisconsin Medical Society, recently, on "Ethylene-Oxygen and Acetylene-Oxygen Anesthesia," and the medical students of the University of Wisconsin on "The Physiology of the Parathyroid Gland."

Society News.—Dr. Louis M. Warfield, Milwaukee, addressed the Dodge County Medical Society, Beaver Dam, recently, on "Diseases of the Heart."—Dr. Charles Eugene Riggs and Dr. William H. Hengstler, St. Paul, addressed the Douglas County Medical Society, Superior, May 5, on "Sleeping Sickness."——Dr. Erwin R. Schmidt, professor of surgery, University of Wisconsin Medical School, Madison, addressed the Sauk County Medical Society, May 19, on "The Surgical Aspect of the Acute Abdomen in Babies and Young Children"; and Dr. Roscoe L. McIntosh, University of Wisconsin Medical School, addressed the society on "Treatment of Diseases of the Skin."——Dr. Herman E. Wolf, La Crosse, was elected president of the Seventh Councilor District Society, and Dr. Dean S. Smith, La Crosse, secretary, at the meeting at Sparta.——The Ninth Councilor District Society met, May 13, at Stevens Point; Dr. Arthur J. Patek, Milwaukee, held a clinic in the afternoon, and the evening was given over to a symposium on periodic health examinations, which was followed by a general discussion. Dr. Donald Waters, Wisconsin Rapids, was elected president of the society, and Dr. Joseph F. Smith, Wausau, secretary, reelected.——Twenty-three physicians of Fond du Lac donated their services recently to make thorough physical examinations of more than 600 children in the first grades of the public schools.

GENERAL

Is Cancer Increasing?—There were 99,138 deaths recorded in 1924 in the registration area of the United States as directly due to cancer, according to the Public Health Service. These figures are based on returns from the registration area, which comprises 88.4 per cent of the total population. On the basis of these reports, the rate of deaths from cancer per hundred thousand of population was 92. In 1923, the rate was 89.4, while in 1900 the reports revealed the rate to be 63.

Automobile Fatalities.—The department of commerce announces that reports on automobile fatalities from seventy-nine large cities in this country for the four week period ending May 22 shows that the total number of persons killed was 487, as contrasted with 426 for the corresponding four weeks in 1925. Eight of the cities reporting had no automobile fatalities during this period this year, while for the corresponding period last year eleven cities had no automobile fatalities. New Bedford, Mass., it is said, has a "clean sheet" for the last twenty weeks.

Prizes for Improvement in Medical Equipment.—The International Committee of the Red Cross has provided, in accordance with a decision of the Twelfth International Red Cross Conference, 100,000 Swiss francs for prizes and competitions in an effort to improve and standardize some articles of medical equipment. The competitions will apply to stretchers, devices for suspending stretchers, individual packages for dressings, cards for wounded men, and identification tags; they will take place at Geneva this fall, but the objects entered in the competitions must reach the International Committee of the Red Cross, 1, Promenade du Pin, Geneva, before August 1, and must be marked "material intended for the institute for international examination of medical equipment," so they will be exempt from custom duties. The international committee will be grateful to receive from persons interested in perfecting medical equipment, supplementary funds to enable it to increase the value of the prizes to be given. An international technical commission will act as the jury of awards.

Pacific Northwest Medical Association.—The annual meeting of this association will be at Spokane, Wash., July 1-3, at the Davenport Hotel, the meeting place having been changed from Glacier Park because the hotels could not promise to provide sufficient facilities. The Pacific Northwest Orological Society and the Pacific Northwest Orthopedic Society will meet jointly with the medical association. Among many prominent speakers will be Dr. George Dock, Pasadena, Calif., whose subjects will be the anemias and the nephropathies and a clinic; Dr. John Whitridge Williams, Johns Hopkins University School of Medicine, Baltimore, whose several subjects relate to obstetrics; Dr. Arthur Steindler, State University of Iowa College of Medicine, Iowa City, whose subjects relate to orthopedic surgery; Dr. George W. Holmes, roentgenologist, Massachusetts General Hospital, Boston; Dr. Harry L. Parker, Mayo Clinic, Rochester, Minn., "Diagnosis of Suppurative Diseases of the Central Nervous System" and "Clinical Signs and Symptoms of Neuritis"; Dr. Howard Lilienthal of Cornell University Medical College, New York, surgical treatment of pulmonary tuberculosis and of nontuberculous suppuration; Dr. Alfred W. Adson, neurologist, Mayo Clinic, Rochester, Minn.; Dr. George H. Semken, surgeon in chief, New York Skin and Cancer Hospital; Dr. Albert Keidel, Johns Hopkins University School of Medicine, Baltimore; Dr. E. H. Mason, McGill University Faculty of Medicine, Montreal, and Dr. Hans Lisser, of the University of California Medical School.

Pan-American Red Cross Conference.—About 250 foreign guests from more than thirty countries, representing national and international medical and nursing societies, met with delegates from national Red Cross societies in the Western Hemisphere at the second Pan-American Red Cross Confer-

ence, Washington, D. C., May 25-June 5. President Coolidge, as head of the American Red Cross, welcomed the delegates. The conference was sponsored by the League of Red Cross Societies, representing fifty-four member nations. The first Pan-American Red Cross Conference was held at Buenos Aires in 1923; the third will be held at Rio de Janeiro, about 1930. With the business of the conference, there were interspersed official dinners, receptions, luncheons and excursions in honor of guests, a visit to Mount Vernon to place a wreath, a gift of the conference, on the tomb of George Washington, and to Warrenton, Va., to the estate of the Hon. Oscar T. Crosby, former assistant secretary of the U. S. Treasury. Among the resolutions adopted by the conference were that: (1) child welfare is a proper activity for the Red Cross; (2) it should participate in the prevention of blindness, as well as in the creation of working homes for the blind; (3) Red Cross societies should take such action as will enable teachers to advise medical examination of every child who seems to suffer from an infection of the tonsils; (4) Red Cross societies should take steps for governments to establish (or to do so themselves) special health courses in which special teachers would be trained in the teaching of hygiene in the public schools; (5) the Red Cross societies should undertake the teaching of health principles with a view to develop a public conscience in the great medical and social problems, and (6) Red Cross societies should take steps to introduce in local newspapers, daily, weekly or biweekly service, giving practical information and advice on health matters.

Activities of Rockefeller Foundation in 1925.—Through its departmental agencies (the International Health Board, the China Medical Board, the Division of Medical Education, and the Division of Studies), the Rockefeller Foundation spent $9,113,730 during 1925. George E. Vincent, Ph.D., the president, states in his annual review that the foundation engaged in the following activities:

(1) Aided the governments of eighteen countries to combat hookworm disease; (2) gave funds to the budgets of organized rural health services in 220 counties in twenty-six American states and in eighteen districts in Brazil, Poland, Czechoslovakia, Austria and France; (3) took precautionary measures against yellow fever in Salvador, Guatemala, Nicaragua and Honduras; (4) continued to work with Brazil in freeing its northern coast from this disease; (5) sent a yellow fever commission to the West Coast of Africa; (6) helped to show the possibilities of malaria control in twelve American states, and in Brazil, Argentina and Italy; (7) shared in the development of professional training of public health officers at Harvard University and the University of Toronto and in schools and institutes in London, Copenhagen, Prague, Warsaw, Belgrade, Zagreb, Budapest, Trinidad and São Paulo; (8) contributed to the progress of medical education at Cambridge, Edinburgh, Copenhagen, Brussels, Utrecht, Strasbourg, Beirut, Singapore, Bangkok, São Paulo and Montreal; (9) provided emergency aid in the form of literature and laboratory supplies for 112 medical centers in Europe; (10) maintained a modern medical school and teaching hospital in Peking with 164 students and fifty-five teachers; (11) aided two other medical schools and nineteen hospitals in China; (12) helped to improve the teaching of physics, chemistry and biology in three Chinese and seven foreign institutions in China and in the government university of Siam; (13) supported nurse training courses in Peking Union Medical College, Yale University, Vanderbilt University and the George Peabody College for Teachers, and contributed to nursing education and service in Brazil, France, Jugoslavia and Poland; (14) provided current funds for an Institute of Biological Research in the Johns Hopkins University; (15) assisted departments at Yale and Iowa State universities engaged in biologic and mental research, and aided the Marine Biological Station at Pacific Grove, Calif.; (16) provided, directly or indirectly, fellowships for 842 men and women from forty-four different countries, and financed the travel of fifty other persons either in commissions or as visiting officials and professors; (17) contributed to the League of Nations international study tours or interchanges for 128 health officers from fifty-eight countries; (18) continued to aid the league's information service on communicable diseases; (19) made surveys of health conditions, medical education, nursing, biology and anthropology in thirty-five countries; (20) lent staff members as advisers and made minor gifts to many governments and institutions; (21) assisted mental hygiene projects both in the United States and Canada, demonstrations in dispensary development in New York City, and other undertakings in public health, medical education and allied fields.

Society News.—At the recent annual meeting of the American Pediatric Society, Dr. Isaac A. Abt, Chicago, was elected president; Dr. Royal S. Haynes, New York, vice president; Dr. Clifford G. Grulee, Chicago, editor, and Dr. Howard C. Carpenter, 1805 Spruce Street, Philadelphia, secretary-treasurer.—The American Otological Society has elected Dr. Arthur B. Duel, New York, president for the ensuing year; Dr. Max A. Goldstein, St. Louis, vice president, and Dr. David Harold Walker, 390 Commonwealth Avenue, Boston, secretary-treasurer.——At the annual meeting of the American Laryngological Association, June 3-5, Dr. Chevalier Q. Jackson, Philadelphia, was elected president; Drs. Lewis A. Coffin, New York, and William V. Mullin, Cleveland, vice presidents; Dr. George Fetterolf, Philadelphia, treasurer, and Dr. George M. Coates, 1721 Pine Street, Philadelphia, secretary.——The American Urological Association elected Dr. John R. Caulk, St. Louis, president at the annual meeting, May 17-19; Dr. Richard F. O'Neil, Boston, president-elect; Dr. Homer G. Hamer, Indianapolis, secretary, and Dr. James B. Cross, Buffalo, treasurer.——Dr. Burt R. Shurly, Detroit, was elected president of the American Laryngological, Rhinological and Otological Society, at the meeting, Montreal, May 31-June 2; Drs. Hubert Arrowsmith, Brooklyn, John J. Shea, Memphis, Harry W. Lyman, St. Louis, William P. Wherry, Omaha, and Frank B. Kistner, Portland, vice presidents; Dr. Ewing W. Day, Pittsburgh, treasurer; Dr. George L. Richards, Fall River, Mass., editor, and Dr. Robert L. Loughran, 145 West Fifty-Eighth Street, New York, secretary.——At the meeting of the American Neurological Association, June 1-3, Dr. Peter Bassoe, Chicago, was elected president; Drs. Ernest Sachs, St. Louis, and James B. Ayer, Boston, vice presidents; Dr. Henry Alsop Riley, 870 Madison Avenue, New York, secretary-treasurer, and Dr. Clarence A. Patten, Philadelphia, assistant secretary.——Dr. Carroll L. Smith, Spokane, was recently elected president of the Pacific Coast Oto-Ophthalmological Society; Dr. William J. Mellinger, Santa Barbara, Calif., and Dr. Frank A. Burton, San Diego, vice presidents, and Dr. Walter F. Hoffman, Seattle, secretary-treasurer.——At the annual meeting of the National Association for the Study of Epilepsy, New York, June 7-8, Dr. George Kirby Collier, Rochester, N. Y., was elected president; Drs. Dan S. Renner, Skillman, N. J., and Thomas B. Bass, Abilene, Texas, vice presidents, and Dr. Arthur L. Shaw, 108 B. The Albiston, Utica, N. Y., secretary-treasurer. The next meeting will be at Cincinnati.——Dr. John Ruhräh, Baltimore, was elected president of the American Medical Library Association at the annual meeting in Ann Arbor, June 8-9; Dr. Harvey Cushing, Boston, vice president; Miss Sue Biethan, Ann Arbor, secretary, and Miss Metta Loomis, Chicago, treasurer.——The American Bronchoscopic Society elected Dr. Daniel Crosby Green, Boston, president; Dr. Sidney Yankauer, New York, vice president, and Dr. Henry B. Orton, 24 Commerce Street, Newark, N. J., secretary-treasurer at the annual meeting, May 29.——The American Psychopathological Association, at its annual meeting, June 11, elected Dr. Sanger Brown, 2d, New York, president; Drs. Ross M. Chapman, Towson, Md., and Edward J. Kempf, New York, vice presidents; Dr. William C. A. Garvin, Binghamton, N. Y., treasurer, and Dr. Martin W. Peck, Boston Psychopathic Hospital, Boston, secretary.

FOREIGN

Personal.—Prof. A. J. Clark has been chosen to succeed the late Prof. Arthur R. Cushny in the chair of materia medica and pharmacology at the University of Edinburgh.

Clinical Course in English.—The Faculty of Medicine of Paris offers a complementary, postgraduate course in mental diseases and diseases of the brain at the Neuropsychiatric Clinic, June 12 to July 12, under the direction of Prof. Henri Claude, in which there will be complementary explanations in English and Spanish. Applications should be made to the chief of clinic, Dr. Targowla, 1, Rue Cabanis, Paris.

Photographs in Court Prohibited.—The *Lancet*, May 29, notes that after June 1 physicians in England will be protected from a form of publicity which they sometimes encounter, but seldom enjoy in that country. On that day, a law becomes effective, which makes it an offense to photograph, in any court, any person who is a judge, a juror, a witness or one of the parties in the case. Any other kind of portraiture or sketching attempted in court with a view to publication is also prohibited, and photographing is deemed to occur in court if it takes place anywhere within the court buildings, or while the victim is entering or leaving the court room, or the precinct of the building. Violation of the new law is punishable, summarily, by a fine not to exceed £50.

Deaths in Other Countries

Stephen Paget, consulting aural surgeon, Middlesex Hospital, vice chairman, Research Defense Society, author of "Memoirs and Letters of Sir James Paget," "The Life of John Hunter" and of "Ambroise Paré and His Times," and many other volumes, May 8, aged 71.——**Ernest Septimus Reynolds,** emeritus professor of clinical medicine, University of Manchester, England, May 22, aged 65.

CORRECTION

Necropsy Percentage.—In the table in Dr. Henry A. Christian's article on "Selecting a Hospital for the Internship" (THE JOURNAL, May 15, p. 1500), the necropsy percentage for Johns Hopkins Hospital, Baltimore, should be 74.5 per cent instead of 84+ per cent.

Government Services

Navy Personals

Lieut. William Moore and Lieut., junior grade, George C. Main, have resigned from the medical corps of the navy.——Comdr. Abraham H. Allen has been ordered to duty on the U. S. S. *Mercy*.——Lieut. Comdr. Carl A. Broaddus, on completion of his course of instruction at the New York Post-Graduate Medical School and Hospital, will proceed to the naval hospital, League Island, Pa., for duty.——Lieutenants, junior grade, Sobisca S. Hall, naval hospital, New York, and Radford Brown, U. S. S. *Elcano*, have tendered their resignations from the medical corps of the navy.

Army School of Nursing

The graduating exercises of the Army School of Nursing were held in the Formal Garden, Army Medical Center, Washington, D. C., June 4; the Surgeon General, Major Gen. Merritte W. Ireland, presided and Mrs. Florence P. Kahn gave the address; Brig. Gen. James M. Kennedy, commanding officer, Army Medical Center, presented the diplomas, and Mrs. Henry R. Rea the Rea Medal, which was awarded to Barbarba Channing Miller of Vermont. There were forty-six graduates in the class.

U. S. Public Health Service

Surg. Roy P. Sandidge has been relieved from duty at Honolulu and assigned to the U. S. Quarantine Station, Rosebank, N. Y.——Asst. Surg. Lucius F. Badger, Jr., has been relieved from duty at Angel Island, Calif., and assigned to the U. S. Quarantine Station, Honolulu.——Surg. Ernest A. Sweet has been relieved from duty at Honolulu and directed to assume charge of the U. S. Quarantine Station at Fort Monroe, Va.——Surg. John W. Tappan has been relieved from duty at El Paso, Texas, and assigned to Fort Stanton, N. M.——Surg. J. G. Wilson has been relieved from duty at Los Angeles and directed to assume charge of service activities at El Paso.——P. A. Surg. Lieuen M. Rogers has been relieved from duty at Fort Stanton and assigned to duty at the hygienic laboratories, Washington, D. C.——Surg. Walter C. Teufel has been relieved from duty at Miami, Fla., and assigned to duty at Dublin, Ireland.——Surg. Lewis R. Thompson has been directed to proceed from Washington, D. C., to New York and return in connection with studies of posture and dust which the service is conducting.——Asst. Surg. Henry A. Rasmussen has been relieved from duty at Fort Stanton, N. M., and assigned to Ellis Island, New York.

Graduation at Field Service School

The U. S. Army Medical Field Service School, Carlisle Barracks, Pa., graduated a class of fifty-five members, June 3, thirty-two of whom were members of the medical corps, thirteen of the veterinary corps, eight of the dental corps, and two from the Cuban army. Lieut. Col. Charles R. Reynolds presented the diplomas; Col. Harlow Brooks, medical reserve corps, professor of clinical medicine, University and Bellevue Hospital Medical College, New York, gave the address. The Skinner medal was awarded to Capt. Joseph I. Martin, U. S. Army, Medical Corps, he having attained the highest general average. Following the exercises, there was a review of the troops in honor of the Surgeon General and the visiting officers, and following this, a reception was tendered General and Mrs. Ireland and Colonel and Mrs. Brooks at the home of Colonel Reynolds.

Captured Whisky for Patients

The Surgeon General of the army has accepted a proposal made by the federal prohibition agent at Tampa, Fla., to turn over to the medical department of the army forty barrels of whisky which have been captured off the Florida coast. The state prohibition officer states that five years ago forty barrels of whisky, made in this country prior to the passage of the prohibition law but shipped out of the country when the law went into effect, were captured off the coast of Florida when an attempt was made, illegally, to return it to the United States. The federal court issued an order that the whisky be confiscated. The prohibition agent, however, secured a modification of the order for the purpose of having this supply turned over to hospitals of the army and navy. The liquor is at present stored at Key West, Fla.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 5, 1926.

Protection Against Lead Paint Poisoning

A bill to make better provision for the protection against lead poisoning of persons employed in painting buildings is to be introduced by the government. It provides that the secretary of state may make regulations for preventing danger from the use of lead paint to persons employed in or in connection with the painting of buildings, and in particular for prohibiting the use of any lead compound except in the form of paste or of paint ready for use; for the prevention of danger arising from the application of lead paint in the form of spray; for the prevention so far as practicable of danger arising from dust caused by dry rubbing down and scraping; for providing for the medical examination of persons employed in or in connection with painting with lead paint, and for the suspension from such employment of persons whose health is or appears likely to be injuriously affected thereby; for securing facilities for washing during and on cessation of work to persons employed in painting; for the use of protective clothing by persons so employed; for preventing clothes left off during work from being soiled by paint, and for the distribution to persons so employed of instructions with regard to hygienic precautions to be taken. The bill prohibits the employment of any woman or young person in painting any part of a building with lead paint. But this does not apply to the employment of persons employed as apprentices in the painting trade under arrangements approved by an order of the secretary of state made after consultation with the organizations, if any, representative of the employers and workers in the trade; or women or young persons in such special decorative or other work (not being work of an industrial character) as may be excluded from the provisions of this section by an order of the secretary of state.

Proposed Register of Opticians

A deputation from the British Medical Association waited on the parliamentary medical committee at the House of Commons on the subject of the opticians bill. The object of the measure is to provide for the creation of a register of qualified opticians, and ultimately to prevent any nonregistered person from practicing as an optician. The bill is promoted by the four existing opticians' societies. Mr. N. Bishop-Harman, Mr. H. L. Eason, and other oculists attended to state the case for the British Medical Association against the bill. It was contended that the matter had assumed greater importance since the royal commission on health insurance had suggested that treatment of the eyes should be among the additional benefits to be granted. This would mean that ultimately there would have to be an oculist or optician in every town. The deputation urged that no cause had been shown for setting up another close corporation; that even if opticians charged smaller fees they could derive large recurring profits from supplying glasses, and that in the testing of the eyes a mistake due to lack of skilled knowledge might result in grave danger to the patient. It was mentioned that there are now 700 competent ophthalmic surgeons, that the number of men pursuing the special course is increasing, and that they will number 2,000 or 3,000 in a few years' time.

Strikers and Medical Students

The main cause of the early collapse of the general strike was the number and efficiency of the volunteers who carried on the essential services of the country. Among these, college

students, including medical students, were prominent. The resentment aroused is shown by a letter from the secretary of the strike committee of the Transport and General Workers Union to the governors of Guy's Hospital, protesting against what he is pleased to call "blacklegging" by the students. The opprobrious term "blackleg" serves for argument and is applied indiscriminately to those who take the place of strikers, no matter how much the latter are in the wrong. The letter runs: "Our people have very long memories and will abstain from assisting the hospital when you are appealing for funds. My committee quite appreciate the fact that from the students' point of view it was only a 'rag' but would strongly point out it is a matter of bread and butter to us." Mr. H. L. Eason, superintendent of the hospital, replying on behalf of the governors, wrote: "During the strike the hospital remained open day and night, with its full service in every department, for the treatment of any person, striker or nonstriker, unionist or nonunionist, who might require assistance. No qualified medical officers, and no students whose services were required for the ordinary work of the hospital, were withdrawn from duty. You are probably not aware, that, in a large medical school attached to a hospital such as Guy's, there are a large number of students who are not required or employed for the actual work of the hospital. These students are free agents, and are not under the control of the hospital as regards their private or public actions. A number of them, no doubt, in common with the rest of the population, responded to the government's appeal to assist in carrying on those services which are essential to the community during a general strike, and for their work in this connection they have earned the gratitude of the public at large." The superintendent added that, even if the members of the union decided to withdraw their support, the hospital would continue, as in the past, to treat without any distinction all persons, whatever their political views, should they or their dependents require the services of the hospital. Of course it is both a false and a perfectly gratuitous assumption to say that the students undertook to help in the maintenance of the essential services of the country in any spirit of "rag"; they did it, like other good citizens, from a sense of duty, and thereby neglected for a time their studies. It is also rather strange that strikers who are engaged in cutting off the "bread and butter" of the whole population should complain about theirs being affected by the action of the students. Equally ridiculous is the threat to cut off subscriptions from a great hospital which provides free medical treatment mainly for the class to which they belong. But the widespread display of resentment against the various voluntary organizations that rescued the country from chaos and tyranny should prepare one for any absurdity. Forsooth, the unions have a perfect right to combine and elaborately prepare and launch an attack threatening the country with starvation, but the people so threatened have no right to combine to prevent this catastrophe. "This is a very wicked animal; when attacked, he defends himself," said a witty Frenchman, but our strikers do not seem to see the point.

Stephen Paget, F.R.C.S.

Mr. Stephen Paget, who practiced for some years as a surgeon but whose claim to distinction is mainly literary, has died at an advanced age. Born in 1855, the fourth son of Sir James Paget, he was educated at Christ Church, Oxford, where he took classical honors, and at St. Bartholomew's Hospital. He was appointed surgeon to the Metropolitan Hospital and later to the West London, and finally aural surgeon to the Middlesex Hospital. In 1910 he retired from practice and devoted himself entirely to literary work and to the defense of scientific investigation against the antivivisectionists and other cranks. In 1901 he first established his reputation as a writer by the publication of "Memoirs and Letters of Sir James Paget," a truthful and discriminating biography of his father, still much quoted. In the following year he edited his father's Selected Essays and Addresses. In 1919 he published a biography of Sir Victor Horsley, in which he dealt fairly with a difficult character, doing full justice to his great scientific achievements, but not allowing himself to be harnessed to the eccentricities of that polemical personality. In 1897 he contributed to a series of biographies, then being issued, a life of John Hunter, and in the same year an independent volume on Ambroise Paré and His Times. The most successful of his other books was "The Young People"; others were Confessio Medici (a book found helpful and much appreciated by members of the medical profession), "Essays for Boys and Girls," "I Sometimes Think," and "I Have Reason to Believe." He was master of a charming and natural literary style, which was inherited from his great father. In 1908 he founded with the help of other distinguished men (Professor Cushny, Sir Victor Horsley, Dr. Beevor, Dr. Head and Dr. Leonard Hill) the Research Defense Society, of which he was appointed honorary secretary. The energy which he devoted to this society was enormous: he became the protagonist in this country in the battle against the antivivisectionists. He wrote a host of pamphlets, lectured, debated, organized meetings and edited the journal, *The Fight Against Disease*. He spared no pains in confuting the calumnies and fallacies of the antivivisectionists, because of the hindrance they might be to the progress of science. His books dealing with this subject are most valuable. Even early in his career his interest was shown by his "Experiments on Animals," of which a third edition appeared in 1906. In 1912 he published "For and Against Experiments on Animals," and in 1914, "Pasteur and After Pasteur."

JAPAN

(From Our Regular Correspondent)

May 15, 1926.

Blind Men's Physical Development

Drs. Kiichiro Hasumi and Tadao Mori have published the results of their researches concerning the general physical consequences of loss of sight in students from 13 to 26 years of age. The blind students are generally below par physically. This poor state of physical development is mostly due to their lack of bodily exercise, but hereditary syphilis seems also to play an important part. Individual constitution, furthermore, may be the primary cause. A good number of those examined showed scoliosis. The loss of sight of the greater number is due to gonorrhea or syphilis, while in only a few does it seem to be due to nutritional trouble. A good many of them have Hutchinson's teeth, alveolar suppuration and caries. Many have respiratory disease.

Representative to the International Hygienic Conference

The ministries of home and education appointed Dr. Itsuma Takagi, medical expert of the government laboratory for the investigation of infectious diseases, as a Japanese representative to the international conference held in the Netherlands at the end of April.

Minimum Nourishment

Dr. Takahira and his assistant have discovered that minimum required nourishment varies: the harder the man's usual labor is, the more nourishment he requires; for instance, the metropolitan police naturally require more nourishment than the motormen and conductors of the street cars in Tokyo, who in turn require more than teachers of the primary schools in Tokyo. Casual laborers require more nourishment than people of any other class. In calculating the calories required by a man, the surface area of his body is the most important element. Accordingly, a gaunt, tall person requires more

calories than a fat but short person. A simple method of measuring the surface area of a man's body, therefore, has become necessary.

The following exact formulas for measuring the surface area of a body have been published by Dr. Takahira and his assistants:

$$\text{Formula 1. } A = W^{0.425} \times H^{0.725} \times 42.46$$
$$\text{Formula 2. } A = W^{0.437} \times H^{0.718} \times 74.49$$

A = surface area of body in square centimeters.
W = body weight in kilograms.
H = height of body in centimeters.

Health Insurance

The health insurance laws, which were published in March, 1922, but which have not taken effect owing to the earthquake disaster of Tokyo, are to be put into force next July. According to the laws, the government or any health insurance association will issue to laborers compulsory or voluntary insurance against accidents, disease, death or childbirth. In case of accident or disease, physicians' fees and bills for medicines for 180 days will be paid by the insurers, and the insured will be allowed 60 per cent of their wages in order that they may pay living expenses while they are unable to work. They may call on any physician, dentist, specialist or pharmacist of those appointed by their insurers. In case of childbirth, the insured shall be paid the expenses of delivery and of a maternity hospital or a midwife, and shall be allowed in addition 60 per cent of their wages for twenty-eight days before the delivery and for forty-two days after it. In case of death, the policyholder shall be paid only the burial expenses, though an amount equal to the insured's wages for twenty days may be allowed.

Kato's Departure for the International Physiology Congress

Prof. Dr. Genichi Kato of the medical college of the Keio University, who is celebrated for his theory of decrementless conduction, left Tokyo for Europe, May 8, accompanied by four other professors in the same college, to make an experimental report on his new theory at the International Physiology Congress to be held in Stockholm next August.

Tuberculosis Patients in Korea

The government of Korea made an investigation of tuberculosis in Korea last year following the statistics that there were 11,939 cases, with 4,040 deaths. The greatest number of the patients were from 30 to 40 years old. Next in order were 695 young patients, aged 20 or so, and among them were 1,811 farmers, 810 merchants, and 523 patients without occupation. The incidence of tuberculosis was lower among fishermen than in any other industrial class.

Impotence of Workmen

Dr. Shogo Koinuma, medical expert of the home department, made an investigation of health conditions of 637 families of workmen in big storage battery factories in Osaka, Kyoto and Yokosuka, and in some big potteries. The statistics concerning 298 families of storage battery employees show the effect of lead intoxication on generative capacity:

170 workmen engaging in lead work:	Families	Percentage
Sterility	42	24.7
Premature or stillbirth and miscarriage	26	8.2
Death of nurslings	70	24.2
128 workmen not engaging in lead work:		
Sterility	20	14.8
Premature or stillbirth and miscarriage	10	2.8
Death of nurslings	66	19.2

Infant Mortality

The statistics bureau of the Tokyo municipal office made an investigation in three wards of the city concerning the families of nurslings that died during the year May, 1924, to April, 1925. The Koishikawa ward is a healthful quarter of the capital that suffered least from the earthquake of 1923, while Honjo is an unhealthful quarter, on the river Sumida and Tokyo Bay, where the earthquake disaster was most severe and most of the laborers and workmen still live in barracks; nearly half of Shitaya suffered the disaster, but is now in course of reconstruction. The statistics show an inseparable relation between the death rate of nurslings and their parents' dwellings.

KOISHIKAWA		HONJO	
Number of Rooms	Number of Dead	Number of Rooms	Number of Dead
5 and more than 5	183	5 and more than 5	69
4	96	4	10
3	135	3	65
2	200	2	249
1	0	1	413

The main causes of their death are as follows:

Causes of Death	Number of Dead
Congenital abnormality, weak constitution and other diseases peculiar to nurslings	578
Pneumonia and bronchitis	474
Diarrhea and enteritis	432
Measles	82
Whooping cough	71
Bronchopneumonia	55
External troubles	39
Diseases of respiratory organs	29
Diseases of heart	25
Infectious or local diseases	20
Influenza	17
Other causes	337

BELGIUM

(From Our Regular Correspondent)

May 20, 1926.

Milk Legislation

The *Moniteur belge* contains an article giving an account of recent legislation pertaining to the production, transportation and sale of milk. To prevent adulteration or fraud, milk may be sold only in containers bearing labels indicating its quality: "whole milk," "skim milk," etc. Milk may not be offered for human consumption if produced by cows that are being treated with drugs that may affect the milk, if the flanks and udders of the animals are habitually covered with dung or if the cows have infectious diseases of the udders. Containers must not be of red or yellow copper, of wood, or of unglazed terra cotta ware. They must not be rusty or have a corrugated surface, nor may their walls be foul-smelling, or contaminated by milk settlings or other material. All containers must be kept in a perfect state of cleanliness by the use of hot water, steam or an alkaline solution applied daily. Milk bottles must be of uncolored, smooth glass, cylindric, with a flat bottom, wide opening and no projecting rim or shoulder. Before each refilling they must be cleansed and disinfected, by being dipped for at least ten minutes in a hot 5 per cent alkaline solution, cleaned with the aid of gravel, metal pellets or a brush, rinsed in clear water and allowed to drain. All deposits of organic matter must be removed. Siphons must be provided with a mechanical priming system. Paper containers must not be used more than once. Milk which comes from barns in which cows affected with contagious or infectious disease are kept may not be offered for human consumption. However, milk from barns in which are kept cows affected with tuberculosis (except tuberculosis of the udder) or foot-and-mouth disease may be offered for sale after having been pasteurized in the manner prescribed by the minister of health. Milk that has undergone changes through the action of micro-organisms or infectious products is prohibited (this

includes acid milk that curdles on boiling; also viscous, putrid, bitter, blue or red milk). Milk may not contain preservatives, neutralizing substances, coloring matter or thickening substances. Excluded also is milk contaminated by impurities, such as particles of fodder or excrementa, hairs, flies, or settlings of organic matter, and which yields, after standing four hours or less, sediment equal to 0.5 cc. of impurities to a pink of milk, or which contains in a quart of milk more than 12 mg. of impurities insoluble in water, alcohol or ether, unless it can be shown by a fermentation test or by a bacteriologic analysis that microbes of putrefaction are absent.

CANNED MILK

Also the regulations governing the production and sale of canned milk have been published. Containers must bear labels indicating the nature of the product, such as "condensed whole milk," "sweetened condensed whole milk," "condensed skim milk" "or sweetened condensed skim milk." The label must also give the contents expressed in grams, and the name and address of the manufacturer or dealer. Milk in a state of fermentation, or containing antiseptics or coloring matter is prohibited.

Smallpox Vaccination

The Société de salubrité et d'hygiène publique of the province of Liége has called the attention of the people and of the public authorities to the efficacy of vaccination against smallpox and has pointed out the need of revaccination. It has expressed regret that vaccination certificates are not more rigorously demanded of children of school age.

Roentgenologic Examination of the Pericardium

Mr. Castex has presented to the Royal Academy of Medicine a communication on the use of lipiodol in the roentgenologic examination of the pericardium. He has employed it in cases of hemorrhagic tuberculous pericarditis, and it would seem that the method is destined to be widely used, owing to its value not only for diagnosis but also as treatment.

The Wassermann Test in Relation to Leprosy

Of twenty-four lepers examined by Dr. Van Den Branden, the Wassermann test was negative in fourteen, positive in five, and anticomplementary in one. The Wassermann test, which was positive in the four remaining cases, became negative in three after antisyphilitic treatment and remained only slightly positive in the fourth. These experiments show that the Wassermann test is generally negative in leprosy, the positive reactions appearing to be due to association with syphilis.

The Trypanosomiasis Expedition

Dr. Fourche has published a report on the trypanosomiasis expedition which was sent out by the Société forestière et minière du Congo, which spent from May, 1923, to May, 1925, in the company's territory. Dr. Fourche's report is an amplification of that of Dr. Schwetz, communicated in a previous letter. All the natives living in the concessions of the company have been examined and treated twice. The mission did not take charge of the workmen of the company until July, 1924, and they have received but the one treatment. At the first examination, about 30,000 natives were reviewed and examined. On the first revision, 40,000 persons, in addition to 20,000 workmen, were reviewed and examined, which included the natives of 750 villages and the workmen in camps. At the time of the first examination, 581 natives affected with trypanosomiasis received a complete course of treatment, and the author treated at least as many more suspects. Sterilization was accomplished in from 35 to 72 per cent, varying with the district, or 55 per cent, on the average. During the first revision, 960 natives affected (new and old cases, whether cured or not) were treated, and an equal number of suspects. During the last nine months, 400 affected workmen and an equal number of suspects were treated. The author holds the view that the number of persons affected ranges between 2 and 10 per cent in the various districts, the average for the whole territory on the left bank of of the Kasaï being 5 per cent.

The disease is still spreading but not rapidly—less rapidly in the East than in the West. Most of the physical difficulties that at first impeded progress have been overcome. The maps of the native territory and the surveys that have been made and are being kept up make it possible to control a population which, during the last two years, has become better disciplined and more confident. Dr. Fourche does not think that the sterilization of the whole population can be accomplished in a brief space of time, but the results secured thus far are very encouraging.

BUCHAREST

(From Our Regular Correspondent)

May 20, 1926.

Experiments with Disinfectants

Some experiments on disinfectants carried out by the Institute for the Teaching of Public Hygiene in Cluj have reference to conditions of use in dwellings. Fluid disinfectants used were phenol (carbolic acid), calcium hypochlorite, mercuric chloride and sodium permanganate, while formaldehyde and sulphurous acid were the gaseous disinfectants tried. The organisms of typhoid, diphtheria, cholera and tuberculosis were selected, and were placed in solutions of broth, milk or melted gelatin as well as on cloth, unvarnished or unpainted wood, linen and wall paper. Formaldehyde vapor seemed superior to sulphurous acid in the case of tuberculous sputum, dried on linen or paper. Mercuric chloride, 1:1,000, destroyed all microbes; phenol, 5 per cent solution, all but anthrax spores. The length of exposure was twenty-four hours in each case. Calcium hypochlorite destroyed only the less resistant microbes, though it proved highly successful with anthrax spores on linen and paper. It was concluded that for highly resistant organisms, such as anthrax spores, mercuric chloride alone is absolutely certain; for tubercle bacilli, both mercuric chloride and phenol are efficacious; sodium permanganate and calcium hypochlorite are practically useless even in the case of slightly resistant organisms, in connection with which the other disinfectants, e. g., formaldehyde, sulphurous acid, mercuric chloride and phenol are fairly satisfactory. Evidence is accumulating to show that disinfection by spraying is the most trustworthy, and is most economical of time and expense.

The Prophylaxis of Malaria

Expeditions sent from Belgrade and Bucharest to some parts of Montenegro and Albania have dealt with the prevention of malaria. The commission recommends, as prophylactic agents, well built houses, freely ventilated and drained, and guarded by mosquito netting. Persons going out at night should have their heads, arms and feet properly protected from mosquitoes. The most efficient prophylaxis is large doses of quinine. The commission found the best results with 0.3 to 0.5 Gm. of quinine every four or five days. It considers permanent protection impossible by this means, and evolved a plan of prophylaxis based on the immunity acquired by some natives, owing to their having acquired the infection in childhood. The commission argues that quinine prevents the body becoming immune, because the malarial organisms are killed before the body has acquired the resistance necessary to complete immunity. It therefore gives sufficient quinine to prevent serious manifestations of the disease, but

not sufficient to kill all the organisms in the blood. Thus, after a considerable time they bring about a permanent immunity.

The Climatic Treatment of Pulmonary Tuberculosis

Dr. Negulescu, chief physician of a leading climatic resort, does not believe that a high altitude is beneficial in pulmonary tuberculosis, because it expands the lungs. He states that shallow breathing is beneficial for a tuberculous patient, and that no breathing would be better still, on the ground that it is a good rule to put a sick organ at rest. Other Roumanian climatologists say that in acute tuberculous disease Dr. Negulescu's assertion may hold good, but that they cannot agree with him in regard to chronic cases.

Compulsory Notification of Pulmonary Tuberculosis

Dr. Catuneanu reported before the Bucharest Medical Society that voluntary notification of pulmonary tuberculosis has been unsatisfactory. In prevention work, early notification is necessary. The time appears ripe for compulsory notification of pulmonary tuberculosis, and the Bucharest city health board has recently decided to make the experiment. To date compulsory notification in certain central European cities has proved successful.

Unqualified Person as Director of a Veterinary Sanatorium

Recently a company was registered in Bucharest as the "Veterinary Sanatorium Limited" and was under the direction of a nonregistered veterinary surgeon, who described himself as "M.D., U. S. A., Specialist, Managing Director." An injunction was applied for by the Association of Roumanian Veterinary Surgeons through the public prosecutor, and was granted. It was held that, although the limited company was not a person, within the meaning of the competent act, the title used, viz., "M.D., U. S. A., Specialist, Managing Director of the Veterinary Sanatorium Limited," led to the inference that the director was a practitioner of veterinary surgery, contrary to the provisions of the act, and that, consequently, an injunction must be granted, restraining both the company and the managing director from using any description of such director indicating that he was a veterinary surgeon or a practitioner of veterinary surgery or any branch thereof.

BERLIN

(From Our Regular Correspondent)

May 8, 1926.

The German Surgical Society

The celebration of the fiftieth anniversary of the founding of the Deutsche Gesellschaft für Chirurgie, under the chairmanship of Körte, was a pronounced success. In honor of the occasion, the *Deutsche medizinische Wochenschrift* issued a memorial edition containing twenty-eight articles by eminent surgeons of various countries, six of the articles being written by Americans. The *Zentralblatt für Chirurgie* also issued a special number.

Bircher of Aarau, Switzerland, presented in the name of the Schweizer Gesellschaft für Chirurgie a bronze statue of von Haller. Bauer of Stockholm read a treatise in Latin issued by the Swedish surgical society.

Von Eiselsberg of Vienna delivered the opening address on "Problems of Surgery of the Brain and Spinal Cord." The researches of Fritsch, Hitzig and others laid the foundation for this branch of surgery. In Bergmann's time surgeons scarcely ventured to operate on the anterior central gyrus. Today surgeons no longer hesitate to operate on any part of the brain, with the exception of the pons and the medulla oblongata. The main thing is a prompt and correct diagnosis, for which an intimate collaboration of neurologist and surgeon is essential. Encephalography has not contributed what was expected of it. It has, however, considerable value for the differentiation of hydrocephalus and brain tumors. Von Eiselsberg does not employ it for localization purposes, but prefers, if necessary, an exploratory exposure of the brain. Tumors of the region of the auditory nerve, which, as recent researches show, are for the most part benign neurinomas, do not need to be radically eliminated. This finding makes for a better prognosis, since they can be favorably influenced by postoperative roentgenization. In fact, in general, roentgen-ray treatment of brain tumors has a good effect. The injection of lipiodol by way of the suboccipital cisterna is of great importance for the recognition of tumors of the spinal cord. In eighty-nine tumors, eighty-four operative cures were effected. Also the remote results were good. Inoperable tumors should be treated with roentgen rays, whereby good effects, and in some instances cures extending over a period of two and a half years, may be secured. Early diagnosis together with observation of every case of obstinate headache, and early operation when indicated, are the principal aims to be achieved.

Fedor Krause of Berlin spoke on the operative treatment of epilepsy. The treatment of jacksonian epilepsy is based on the recognition of the focus which gives rise to the attack and on its operative removal. This requires a most exact observation of attacks. It often appears as if the convulsion began in one of the extremities, but it is preceded by an ocular manifestation or a turning of the head, which may last only a few seconds and therefore easily escapes observation. In such cases, one would be wrong in attacking the motor center of the extremity concerned. In other cases, the attack is preceded by an aura of visual, auditory or olfactory hallucinations. In contradistinction to jacksonian epilepsy, he does not regard true epilepsy as ordinarily amenable to surgical treatment. Only when the attacks begin with typical local symptoms is surgical intervention indicated. Even in jacksonian epilepsy, intervention must be early.

Guleke of Jena dealt with the clinical aspects of neurinomas, of which he distinguished three groups. To the first group belong neurinomas found in various parts of the brain and which are exemplified by tumors of the auditory nerve. Second, tumors found along the vertebral canal usually originate in the posterior roots and may develop along the transverse processes. The third group occurs along the peripheral nerves (sciatic, peroneal). Two thirds of the neurinomas were found at the points of exit of the nerves. The neurinoma is hard to distinguish from the neurofibroma and the sarcoma.

The second address was given by E. Rehn of Düsseldorf on "Surgery and Organic Function." Organic function is life itself; disease is a complex of functional disturbances. The speaker mentioned a new type of patient that is endangered by operation; namely, the so-called embolic, who is represented as pale of skin, corpulent, and unable to cope with severe mental and physical exertion. A comparison of the blood coagulation curves shows a markedly increased coagulability. Further dangers lie in endocrine disturbances. Soma and psyche cannot be separated. The surgeon must be able to influence also the psyche. The vagotonic patient is a poor surgical risk. He is more likely to suffer from shock, and local anesthesia should be avoided in his case because of the danger from drop in blood pressure. The disturbances can be prevented by the use of calcium chloride urea. Anesthesia may cause severe disturbances in the liver and bile ducts, especially in patients with chronic liver affections. The speaker emphasized that infusions of sodium chloride and dextrose are not always indicated. Blood transfusions are better. In preoperative examination of the heart the Kaufmann functional test is appropriate, or the patient may be required to inflate ten times a pneumatic ring. Prophylac-

tic administration of digitalis is recommended in selected cases. Calcium chloride urea may be injected as a prophylactic in pulmonary affections. Both kidney and liver function should be tested. Thus, the surgeon must occupy himself more and more with physiology. Every organ is a part of the whole organism. Wounds heal better on an acid than on an alkaline diet, although care must be taken to preserve a certain alkali reserve in the body.

Haberer of Graz spoke on the sparing of tissue in operations. Loss of blood and bruising of the tissues must be avoided. If the tissues are spared, scar tumors, adhesions and thrombi are less frequent and the danger of embolism is lessened. He thinks that some of the postoperative lung complications are due to small emboli.

Kirschner of Königsberg discussed the treatment of suppurative generalized peritonitis. His statements were based partly on cases occurring in the Königsberg clinic and partly on 10,000 further cases in twenty-three clinics and hospitals. The statistics reveal a high mortality in early childhood up to age 5, a decrease up to age 15, and then a gradual increase from the fifth decade on. The mortality increases from 24.9 per cent in the first twelve hours to 32.4 per cent in the second twelve hours, 45.5 per cent when the operation is performed the second day, and 66.6 per cent when the operation is delayed beyond forty-eight hours. For eliminating the exudate found in the abdominal cavity, Kirschner recommends irrigation with physiologic sodium chloride solution if the exudate is rather evenly distributed over the abdominal space and collections of filth are visible; if the material to be removed is distributed over a small area, "dry mopping" is indicated. He is opposed to the introduction of medicaments into the abdominal cavity. If every focus of infection can be effectively eliminated, the wound should be closed without drainage. If that is not possible, then only the circumscribed focus of infection should be drained. Gauze may be used to wall off the focus of infection from the remaining abdominal cavity. Drainage of Douglas' pouch, and the Rehn-Fowler position, Kirschner regards as useless. It is of greater importance that the patient assume a comfortable horizontal position. Camphor preparations have not proved as valuable as digitalis, epinephrine and, above all, morphine. The ingestion of fluids should be so regulated by the rectal and intravenous drip methods that the amount of urine voided daily be from 1 to 1.5 liters. Some intestinal activity is needed to remove toxins that may have collected in the intestine. Furthermore, it serves, as Usadel of Königsberg has shown by experiments, to stimulate blood flow in the portal circulation, in which in peritonitis and intestinal paralysis stagnation often occurs. When intestinal paralysis has persisted, Kirschner has seen improvement result in very severe cases from enterostomy and multiple percutaneous punctures of the intestine. As a result of the following out of these principles, the mortality of the Königsberger clinic has been reduced from 87.5 per cent to 30.1 over a period of thirty years. Early operation and improvements in technic have contributed to this satisfactory result.

Mention of the numerous individual papers must be omitted for lack of space.

Marriages

JOHN CALVIN COX, Maplewood, N. J., to Miss Florence Becker of Hilton, April 23.

EDWARD VINCENT MILHOLLAND to Miss Rose Marie Barry, both of Baltimore, June 2.

WALTER D. HAMMOND, Minneapolis, to Miss Esther Mae Huff of Seattle, May 19.

Deaths

Franklin Emmett Wallace ⊕ Pueblo, Colo.; Rush Medical College, Chicago, 1896; member of the American Academy of Ophthalmology and Oto-Laryngology, the Colorado Ophthalmological Society and the Colorado Oto-Laryngological Society; Spanish-American War veteran; formerly city physician of Monmouth, Ill., and coroner of Warren County, Ill.; aged 58; died, May 23.

Edward Parks Hall ⊕ Kansas City, Mo.; Ensworth Medical College, St. Joseph, 1897; member of the American Academy of Ophthalmology; professor of otorhinolaryngology, University of Kansas School of Medicine, Rosedale; served during the World War; aged 49; died in May, of chronic myocarditis and mitral insufficiency.

William R. Brooksher ⊕ Fort Smith, Ark.; Kentucky School of Medicine, Louisville, 1891; member of the Radiological Society of North America; past president and secretary of the Sebastian County Medical Society; aged 61; died, May 19, of septicemia.

Sumner Danforth Davis, Jermyn, Pa.; Medical School of Harvard University, Boston, 1869; also a druggist; for fifteen years postmaster; formerly secretary of the board of health and for thirty-two years health officer; aged 80; died, April 11.

Morris Printz ⊕ Denver; University of Colorado School of Medicine, Denver, 1918; aged 31; died in April, of septic sore throat and acute lymphatic leukemia, while attending the annual session of the American Medical Association.

Haughton Baxley, Markham, Va.; College of Physicians and Surgeons, Baltimore, 1889; one of the founders of the Maryland Medical College and the Franklin Square Hospital, Baltimore; aged 58; died, May 28, of pneumonia.

David Jasper Hill, Lexington, N. C.; College of Physicians and Surgeons, Baltimore, 1893; member of the Medical Society of the State of North Carolina; aged 62; died, May 13, at Winston-Salem, of angina pectoris.

Elliott Swift Riggs, Washington, Pa.; Jefferson Medical College of Philadelphia, 1869; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 83; died, May 2, of cerebral hemorrhage.

John Columbus Hammack, Walkertown, N. C.; College of Physicians and Surgeons, Baltimore, 1895; member of the Medical Society of the State of North Carolina; aged 58; died, May 15, of myocarditis.

Charles Paul Pike, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1885; member of the Medical Society of the State of Pennsylvania; aged 72; died, May 1, of myocarditis.

William Divine Davis ⊕ St. Louis; Washington University Medical School, St. Louis, 1909; member of the St. Louis Dermatological Society; aged 38; died suddenly, May 20, of chronic myocarditis.

Richard Gilbert Ayer, Honolulu, Hawaii; Medical School of Harvard University, Boston, 1891; member of the Hawaii Territorial Medical Association; aged 58; died, March 30, of lobar pneumonia.

Charles Cross ⊕ San Francisco; Cooper Medical College, San Francisco, 1895; served during the Spanish-American and World wars; aged 62; died, March 24, of cerebral hemorrhage.

John William Elliott ⊕ Sharon, Pa.; Western Reserve University School of Medicine, Cleveland, 1889; Jefferson Medical College of Philadelphia, 1890; aged 67; died, April 19, of pneumonia.

Frank P. Peyton, Mexia, Texas; Louisville (Ky.) Medical College, 1888; member of the State Medical Association of Texas; aged 71; died, May 14, at the Brown Hospital, of pneumonia.

Edith Sara Brownsill ⊕ Berkeley, Calif.; University of California Medical School, San Francisco, 1904; on the staff of the Bates Sanitarium; aged 54; died, April 26, of heart disease.

Louis J. Herget, Louisville, Ky.; Louisville Medical College, 1894; member of the Kentucky State Medical Association; aged 54; died, May 8, of a self-inflicted bullet wound.

Gerhard Arthur Isselstein, Dayton, Ohio; Ohio State University College of Medicine, Columbus, 1925; aged 26; died, May 4, at sanatorium in Colorado Springs, of tuberculosis.

Powhatan Moncure, Bealeton, Va.; Medical College of Virginia, Richmond, 1884; member of the Medical Society of Virginia; aged 65; died, May 3, of arteriosclerosis.

James Cullen Keaney, De Soto, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1874; aged 88; died, May 4, at St. Mary's Hospital, St. Louis, of lobar pneumonia.

James Crowe ● Huntingdon Valley, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1904; aged 48; died, May 1, of pneumonia, following influenza.

Isaac Newton Presley, Ellettsville, Ind.; Beach Medical Institute, Indianapolis, 1885; Civil War veteran; aged 81; died, February 28, at Bridgeport, of paralysis.

Achilles Walter Cook, Wheatland, Iowa; Keoknk Medical College, 1891; aged 60; died, May 26, at the Jane Lamb Hospital, Clinton, of carcinoma of the throat.

William G. W. Tupper, Minneapolis; University of Michigan Medical School, Ann Arbor, 1884; aged 65; died, May 8, at the Eitel Hospital, of coronary sclerosis.

William J. McWaters, Bragg City, Mo.; University of Tennessee College of Medicine, Memphis, 1901; aged 56; died, May 9, of carbolic acid poisoning.

John William Miller, Chinnville, Ky.; Eclectic Medical Institute, Cincinnati, 1905; aged 70; died in May, of carcinoma of the face, and arteriosclerosis.

Frederick Wilhelm Froehling ● Kansas City, Mo.; University of Leipzig, Germany, 1891; aged 62; died in May, of carcinoma of the gallbladder and liver.

Alexander C. Schuman, Louisville, Ky.; University of Louisville School of Medicine, 1875; aged 85; died, May 9, of arteriosclerosis and asthma.

George C. Kingsbury ● Largo, Fla.; Miami Medical College, Cincinnati, 1880; aged 67; died, May 19, of acute mastoiditis and diabetes mellitus.

Alonzo P. Baker, Herrin, Ill.; Medical College of Ohio, Cincinnati, 1875; Civil War veteran; aged 77; died, May 21, of heart disease and asthma.

Marion L. Rice Berneike, Anaheim, Calif.; University of Michigan Medical School, Ann Arbor, 1874; aged 75; died, February 3, of myocarditis.

Willis Pearl Middleton, Acton, Mass.; Tufts College Medical School, Boston, 1912; aged 36; died, April 2, of pneumonia, following influenza.

Ulric J. Lalonde, Montreal, Que., Canada; Laval University Faculty of Medicine, Quebec, 1891; aged 63; died recently, following a long illness.

Harmon Jasper Rossiter, Deertrail, Colo.; Eclectic Medical University, Kansas City, 1918; aged 44; died, May 7, of carcinoma of the stomach.

Buford Thomas Wood, Danville, Ky.; University of Louisville School of Medicine, 1873; aged 76; died, May 14, of cerebral hemorrhage.

George B. Buckingham, Brookville, Ind.; Kentucky School of Medicine, Louisville, 1879; aged 74; died suddenly, May 15, of heart disease.

Ralph B. Crawford, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1882; aged 85; died, April 11, of myocarditis.

Stephen Goodhue Bailey, Lowell, Mass.; Boston University School of Medicine, 1880; aged 81; died, March 31, of carcinoma.

Nathan Edward McAlister, Portland, Ore.; University Medical College of Kansas City, Mo., 1897; aged 57; died, March 31.

Laban Hazeltine, Jamestown, N. Y.; College of Physicians and Surgeons, Baltimore, 1880; aged 73; died, May 10, of uremia.

Harrison D. Cooper, Dexter, Kan. (licensed, Kansas, 1901); aged 68; died, March 15, of cerebral hemorrhage.

Franklin Pierce Amdor, Sand Springs, Mont. (licensed, Iowa, 1887); aged 76; died, March 28.

Carl Wintrich, Chicago (licensed, Ohio, 1896); aged 79; died, April 30, of chronic myocarditis.

L. D. Coffman, Poetry, Texas (licensed, Texas, under the Act of 1907); aged 59; died, March 21.

Thomas F. Clark, Belpre, Kan. (licensed, Kansas, 1901); aged 83; died, March 4, of paralysis.

E. P. Davenport, Craigville, Ind. (licensed, Indiana, 1897); died recently, of paralysis.

J. W. Miller, Morrisville, Mo. (licensed, Missouri, 1883); aged 85; died, April 21.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

L. M. HUNTER'S EPILEPSY CURE

Mail-Order Quackery in Little Rock, Arkansas

LaFayette M. Hunter, M.D., Little Rock, Arkansas, conducts a crude piece of mail-order quackery under the trade name "The Dr. Hunter Laboratories," selling a mail-order "cure" for epilepsy. Some months ago the stationery of "The Dr. Hunter Laboratories" declared that its "secretary" was one H. S. Brevoort, M.D. What are the professional histories of these professional gentlemen?

HUNTER'S RECORD

According to our records, LaFayette M. Hunter was born in Kansas in 1888, and received a diploma from the Eclectic Medical University of Kansas City, Missouri, in 1913. This institution, which went out of existence in 1918, was a low-grade affair that was not recognized even by the state in which it operated: in fact, forty of the forty-eight states in the union refused to recognize its diplomas. At the time that Hunter obtained his diploma the Eclectic Medical University had for its secretary D. R. Alexander, whose later institution, the notorious Kansas City College of Medicine and Surgery, was so deeply involved in the nation-wide medical diploma-mill scandal of 1924-1925. The same year that Hunter received his diploma (1913) he also obtained a license in Arkansas through the Eclectic Board—probably the easiest way to obtain a license to practice medicine in the United States.

In 1916 L. M. Hunter and H. S. Brevoort were operating a quack advertising office at Pittsburg, Kansas. According to the Police Department of Pittsburg, Kansas, Hunter while there was arrested at least twice for running a house of prostitution and on both occasions he forfeited his bonds and was found guilty and fined. Hunter left Pittsburg early in 1917 and word was next received that he was in Dodge City, Kansas, connected with the "United Doctors" quackery. In 1919 Hunter was at Coffeyville, Kansas, where he conducted "The Dr. Hunter's Institute of Healing," part of whose advertising material was a four-page sheet, *Health Talk*, edited by H. S. Brevoort. In 1921 Hunter was conducting an advertising office that he called "The Hunter Clinic," from Little Rock.

It is worth noting at this point that, although Hunter apparently practiced medicine for many years in Kansas, he never, so far as our records show, was legally licensed to practice medicine in that state. He had no difficulty, apparently, in getting an Eclectic license to practice in Arkansas—a state that is notorious for the ease in which owners of diplomas from diploma mills can obtain licenses through its Eclectic Board. The mail-order epilepsy cure now being conducted under the trade name The Dr. Hunter Laboratories seems to be an outgrowth of Hunter's so-called clinic.

BREVOORT'S RECORD

The professional record of H. S. Brevoort is about as unsavory as that of Hunter. Brevoort, according to our records, received a diploma in 1893 from the Medical Department of Omaha University. In 1896 he was reported to be at Arapahoe, Nebraska; about a year later in Scott, Kansas, and then at DuBois, Nebraska. He is said to have had to leave DuBois "between days" under circumstances that at this time it is not necessary to detail.

Some time later he practiced medicine and operated a drug store in Reeds Spring, Missouri, going from there to St. Joseph, Missouri, where, in 1913, he was in charge of the "United Doctors" quackery at that place. For three or four years he was at Hutchinson, Kansas, later going to Coffeyville, Kansas, where, as has already been stated, he was

connected with Hunter. In 1923 he had gravitated to Arkansas.

Although Brevoort's name appeared for some time on the stationery of the Hunter Laboratories, the man, so far as our records show, has never been licensed to practice medicine in Arkansas. He has not even a license from the Eclectic Board of that state. Brevoort's name no longer appears as "secretary" of the Hunter mail-order quackery. His name is now used by Hunter in connection with the "come-on" literature. Hunter reproduces a letter in which Brevoort states that, as a physician, he takes pleasure in recommending Hunter's treatment. Brevoort now, it seems, is at Wichita Falls, Texas. His stationery notifies the public that he has a "Practice Limited to Office Treatment of Chronic and Rectal Diseases."

ENTER L. L. MARSHALL

One other point is worth noting before discussing Hunter's nostrum and its method of exploitation. An Eastern newspaper that recently was offered some advertising of the Hunter quackery rejected the advertisement. Shortly thereafter the paper received a letter from the advertising agency that submitted the advertisement, reading in part as follows:

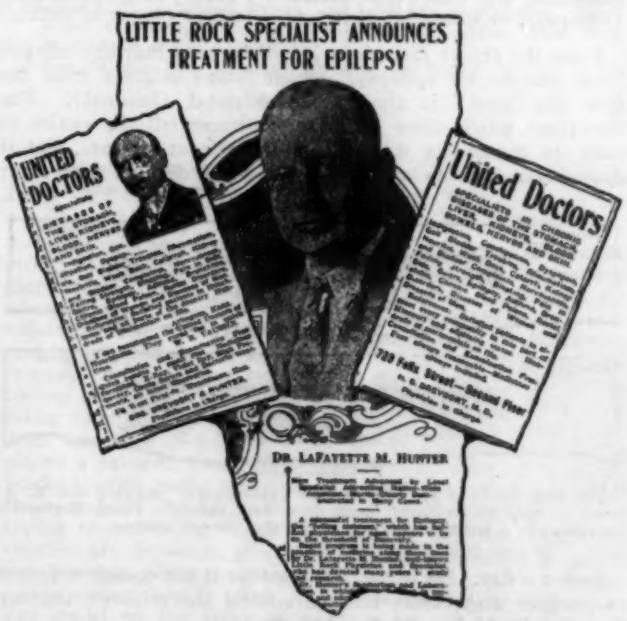
> "You have returned to us ad. of Hunter Laboratories, with notation 'Adv. not acceptable.'
>
> "However, in view of the fact that we have received a letter from Dr. L. L. Marshall of the State Board of Health of Arkansas—which we quote below—we are re-submitting the copy to you.
>
> "This is to certify that I have examined the product of the 'Dr. Hunter Laboratories' of this city, namely: 'Dr. Hunter's Rational Treatment for Epilepsy.' The Product conforms with the Pure Food & Drug Act and contains no opiates or habit forming drugs. I have also noted their advertising and it is not exaggerated. (Signed) L. L. MARSHALL, M.D., Member State Board of Health."

This use of the name of the State Board of Health of Arkansas to bolster up a medical mail-order fake should be of interest to the citizens of that commonwealth. L. L. Marshall, we regret to say, is a member of the State Board of Health of Arkansas, having been appointed Jan. 1, 1925. The Marshall testimonial, as quoted by the advertising agency, in itself, indicates the professional status of the man, but that is not all. Our records show that Louis Linn Marshall was born in 1881, and got a diploma from the same wretched school that gave one to Hunter—the Eclectic Medical University of Kansas City. Marshall secured his diploma in 1912, and was immediately licensed in Arkansas—of course, by the Eclectic Board. In applying for his license in Arkansas, Marshall declared that he had attended four full courses of medical lectures, the first three years of which were alleged to have been at the Denver Homeopathic Medical College, Denver, Colorado, from September, 1903, to April, 1906. THE JOURNAL has evidence that shows that Marshall did not attend the Denver Homeopathic Medical College. The official list of matriculants of the Denver Homeopathic Medical College for some years before Marshall claims attendance until the school became extinct in 1909 fails to show Marshall's name. The person who endorsed Marshall's application for examination before the Arkansas Board, and declared him to be "a person of high moral character and worthy of professional recognition," was D. R. Alexander of Kansas City, who then was secretary of the institution that granted Marshall a diploma, and the man whose notorious Kansas City diploma-mill, during the past year or two, has made a record that smells to heaven.

When Marshall was in Kansas City and before he had even so poor a medical prop as a diploma from the Eclectic Medical University, he was connected with a concern known as the Samaritan Hospital. Kansas City papers in the spring of 1912 reported that L. L. Marshall, president and manager of the Samaritan Hospital, and one James M. Martin, alias "Dr. F. W. Lanoix," were in the county jail charged with causing the death of a woman by criminal operation. At that time D. R. Alexander was secretary of the Samaritan Hospital. Kansas city papers at that time printed a picture of Marshall bearing the legend "L. L. Marshall, one of the Samaritan Hospital Charlatans." Marshall's case never came to trial. The matter dragged along for some months and the papers reported that, after the state had spent much money in gathering evidence, the cases against Marshall (charging him with manslaughter in the second degree and practicing medicine without a license) were dismissed. Marshall's activities before he went into the medical field need not, at this time, be discussed.

THE "CURE" ITSELF

So much for the professional elements in the personnel of Hunter's mail-order epilepsy cure. The cure itself and its methods of exploitation differ not a great deal in their sordid details from those of average medical mail-order quackery. Hunter emphasizes in his advertisements the falsehood that his treatment "stops seizures from the first day used." Those who answer the advertisement first receive letter no. 1 of the follow-up series. With the first letter there is the usual batch of printed testimonials—without names or addresses! There is also a six-page leaflet in which Hunter states that he has been an interested and close student of epilepsy ever since he was "in charge of the insane and



Some of the older advertising of Hunter and Brevoort together with Hunter's present piece of quackery—the epilepsy cure.

epileptic department of a large charity institution." He adds that there was, until recently, no reliable remedy for epilepsy, but "now in the latter end of my long professional career" (this line of hokum was sent out by Hunter less than ten years from the time he got his diploma from the Eclectic Medical University of Kansas City) "a true specific for epilepsy has been found." If the first letter fails to bring an order, the second letter of the follow-up series comes ten days later. Letters 3, 4, 5 and 6 come at regular ten-day intervals, each being a little more insistent than its predecessor. Then comes the seventh letter, which attempts to combine all the persuasiveness of the previous six in an effort to extract the $5 necessary for one "treatment." If this fails of its object, Hunter apparently drops that name from his list for about a year, when he makes a final effort.

In a form-letter sent out in July, 1924, Hunter says: "Fifteen years ago, when I graduated from medical college and stood on the threshold of my medical career. . . ." The facts are, as has already been stated, Hunter got his diploma in 1913, eleven years before this letter was sent out, which would indicate that he finds it difficult to stick to the truth even in chronological matters.

Five dollars was sent to the "Dr. Hunter Laboratories" for a complete "course" of "Dr. Hunter's Rational Treatment for Epilepsy." In due time the small package that was received,

containing the treatment, was turned over to the A. M. A. Chemical Laboratory for analysis. The laboratory reported as follows:

LABORATORY REPORT

"One original package of Dr. Hunter's Rational Treatment for Epilepsy (Dr. Hunter Laboratories, Little Rock, Ark.) was submitted to the A. M. A. Chemical Laboratory for examination. The package contained fifty pink colored capsules containing a white, odorless, almost tasteless, faintly gritty powder; the average weight of the contents of each capsule was 0.27 Gm. (approximately 4.2 grains). No statement as to the composition was given on the trade package or in the accompanying circular. Qualitative tests indicated the presence of milk sugar and phenobarbital ("luminal"). Alkaloids, heavy metals, bromides, iodides, organic acids, were not found.

"Quantitative determinations yielded the following:

"Loss on drying..... 2.6 per cent.
"Phenobarbital .....24.8 per cent.
"Lactose (milk sugar).....72.7 per cent.

"From the foregoing it may be concluded that each capsule of 'Dr. Hunter's Rational Treatment for Epilepsy' contains essentially 0.07 Gm. (approximately 1 grain) of phenobarbital (luminal), to which has been added lactose (sugar of milk)."

From the report just given it will be seen that this alleged "true specific for epilepsy," which "stops seizures from the first day used," is simply phenobarbital (luminal). The directions which come with the treatment tell the victim to take six capsules a day until a drowsiness appears, and if drowsiness fails to appear by the third day, to take eight

The letter-heads of the "Dr. Hunter Laboratories," showing that H. S. Brevoort used to be directly connected with fakery. Today Brevoort's connection is a testimonial letter puffing the Hunter nostrum.

capsules a day. He is told further that if the dosage required to produce drowsiness fails to control the seizures, another capsule should be added to the dose.

Phenobarbital (luminal) is a powerful drug of distinctly habit-forming tendencies. Its sale in the British Isles is controlled under the Dangerous Drugs Act and it can be sold only on a physician's prescription. In this country there is no state or national control in the sale of either phenobarbital (luminal) or of the less dangerous barbital (veronal); the presence of luminal does not even have to be declared on the label under the regulations of the Food and Drugs Act, and, although it is distinctly poisonous and therefore should be debarred from the mails, as provided in the postal laws and regulations, it is being sent broadcast to any one that orders it by various mail-order quacks, of which L. M. Hunter is but one.

Phenobarbital (luminal) is more toxic than barbital (veronal). Those who have had large experience with the drug declare that it should never be prescribed in single doses of more than 1½ grains, and not more than 3 grains should be taken in twenty-four hours, because of the very slight difference that exists between the therapeutic dose and the fatal dose. Hunter tells his victims at the outset to take from six to eight grains daily. As phenobarbital frequently produces severe skin rashes, gastro-intestinal symptoms and nephritis, it should be administered only under the direct control of a physician.

In spite of these facts, well known to the medical profession, quacks like Hunter sell indiscriminately, without let or hindrance, phenobarbital in secret mixtures under proprietary names and without any hint of the fact that the stuff is phenobarbital. In addition, they charge an exorbitant price for the product. Hunter, for instance, charges $5 for 50 grains of phenobarbital in capsule form—ten cents a grain. The retail price of phenobarbital is less than one and one-half cents a grain. The financial feature, however, is of but minor importance; the serious fact is that quacks are permitted to send a dangerous drug, hidden under a proprietary name, to victims of epilepsy under the claim that it will cure this condition. That is what L. M. Hunter is doing today with the indirect aid and assistance of H. S. Brevoort, and a member of the State Board of Health of Arkansas, L. L. Marshall.

Correspondence

"SELECTING A HOSPITAL FOR INTERNSHIP"

To the Editor:—Unfortunately, some institutions have felt that, not being included in the table which accompanies my paper entitled "Selecting a Hospital for an Internship" in THE JOURNAL, May 15, indicates that they may not be acceptable for internship. The table covers only a few cities and serves merely as an example of how the percentage of necropsies may be a guide to the quality of the work of a hospital.

There are numerous hospitals in the country, not included in the table, that have a 25 per cent or greater percentage of necropsies. All such should be regarded as acceptable for an internship. Prospective interns should make inquiry of any hospital under consideration as to its number of deaths and number of necropsies per annum, among other information sought; any hospital should be willing to give this information.

HENRY A. CHRISTIAN, M.D., Boston.

DUODENAL TIPS

To the Editor:—In THE JOURNAL, May 22, are descriptions of two new duodenal tips. Thus, by the inventions of Carl V. Vischer and Moses Einhorn the armamentarium of the gastroenterologist is enriched (or emburdened) by two new modifications of the instrument which seems to baffle so many minds.

Each one of these tips, as well as each of those previously devised by others, is the easiest for the physician to introduce, the least disagreeable for the patient to swallow, passes into the duodenum in the shortest possible time, and affords the best drainage by virtue of this, that or the other qualities it possesses. It is amusing to see on the very same page the same advantages claimed for one tip because of its being the largest and heaviest as yet devised, and for the other being the smallest and lightest.

Is it really the design of the duodenal tip used that determines its easy and quick passage into the duodenum? Judging from the number of duodenal tips already on the market and new ones produced every now and then, one would conclude that this is the case. In my opinion, the size, shape, weight, etc., of the tip play a very unimportant part in accomplishing a successful duodenal intubation. One who carefully follows the generally accepted rules as outlined in Dr. Moses Einhorn's communication cannot help noticing that it is not the tip that counts but a combination of many other factors, not the least being the skill with which the procedure is performed. The condition of the nervous system of the patient on any particular day, the condition of the pylorus, the amount of gagging produced in introducing the tube, the rate at which the patient swallows the tube—all these count for much more than the type of tip employed. It is common experience to have the same tube and tip pass into the duodenum with the same patient in fifteen or twenty minutes on

one day and take several times that long on another. The only advantage of a large tip over a small one is that it is easier to locate it under the fluoroscope, especially when intubating a stout patient. With the average patient, it matters very little what kind of a tip one uses. The less one relies on the wonderful qualities of any particular tip, the more attention he will pay to the other details of the procedure and the better the results.

ZACHARY SAGAL, M.D., New York.
Assistant Chief of Clinic in Gastro-Intestinal Diseases, Vanderbilt Clinic, Columbia University.
320 West End Avenue.

DISTRIBUTION OF PHARMACEUTIC SAMPLES

To the Editor:—I desire to call your attention to the growing and pernicious custom of drug houses in mailing their literature and samples to the homes of physicians. I regret to note that some of the better pharmaceutic firms are also entering into this practice. The average daily mail contains from one to a dozen circulars, many of which are not desirable for a home library table, and certainly not elevating reading for children. Many of the samples are laxatives and douche powders containing poisons and are a menace to the home.

I simply call this matter to your attention, hoping for general disapproval and thereby securing cooperation sufficient to stop this bad method of advertising.

CHARLES M. NICE, M.D., Birmingham, Ala.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SARCINAE IN GASTRIC CONTENT AND IN URINE

To the Editor:—What is the pathologic significance of *Sarcina* in the stomach and urine? Is there any relationship? Could you give me references to authorities or publications where this information may be treated?

ROBERT F. WILCOX, M.D., LaPorte, Ind.

ANSWER.—*Sarcina ventriculi* is found frequently in the gastric contents in cases of long continued obstruction due to ulcer with high acidity. In these cases there is extensive fermentation, with the formation of large numbers of these organisms. They are also found in the feces in cases of obstruction due to ulcer. *Sarcina* is exceptionally found in the urine. It is smaller than the gastric sarcina, from which it is developed by transmission through the urethra. The urine being an unfavorable medium for its cultivation, the sarcina produced in it is imperfectly formed. The organisms are usually, if not always, accidentally introduced into the bladder by catheterization.

The following works may be consulted:

Munn, J. D.: Physiology and Pathology of Urine, 1908.
Finlayson: *Brit. M. J.*, 1891.
Heitzman: Urinary Diagnosis and Analysis.
Wood, F. C.: Chemical and Microscopical Diagnosis, 1905.
Todd, J. C.: Clinical Diagnosis.

TREATMENT OF BRONCHIAL ASTHMA

To the Editor:—I have a patient suffering from bronchial asthma, with excessive coughing. Epinephrine relieves her temporarily. What is the best known treatment? Can you suggest good literature on the subject?

M.D., West Virginia.

ANSWER.—Asthma is not a disease but a syndrome of at least two different etiologic types: (1) protein hypersensitiveness (allergy) and (2) bacterial infection. In both, a predisposing element in the nervous system must be recognized. This is partly psychic, so that an attack may come on merely because the patient expects it. Fatigue undoubtedly plays a part, so that the loss of sleep produced by attacks favors their continuation, thus establishing a vicious circle. There is also an excessive irritability of that part of the vagal nervous mechanism which controls the motor and secretory activity of the bronchi; and, the more frequently this mechanism is set into action, the more irritable it becomes. The part played by the nervous system emphasizes the importance of prompt and efficient treatment of the attack, nothing better for which has yet been advanced than the intramuscular injection of epinephrine solution, which sometimes acts satisfactorily in doses of 0.1 cc., though as much as 1 cc. may be required. It acts best and in smallest doses when used at the first warning of an attack. Hence the patient must be entrusted with its injection. Sedatives such as phenobarbital and amidopyrine, and antispasmodics like atropine or scopolamine lessen the liability to attacks, and the need for epinephrine injections.

In the allergic type of asthma, the protein to which the patient is hypersensitive must be discovered and he must be protected from it or immunized against it. In the infectious type, specific immunization by means of autogenous vaccine is likely to be of value. Anything that improves the bronchitis present in the infectious form lessens the tendency to asthmatic attacks. This is the way iodide or arsenic acts.

Modern views on the nature and treatment of asthma are presented by:

Walker, I. C., in Billings, Frank; and Forchheimer, Frederick: Therapeusis of Internal Diseases, George Blumer edition, New York, D. Appleton & Co. **4**: 10, 1924.
Brown, W. L.: *Brit. M. J.* **2**: 367 (Aug. 29) 1924.

COCKROACHES

To the Editor:—What makes water bugs and croton bugs so common in our homes and what can be done to get rid of them?

M.D., Pennsylvania.

ANSWER.—The wide distribution of cockroaches is brought about chiefly through maritime trading. Of the various species, the croton bug, *Blatella hermanica* Linn., and the oriental roach, *Blatta orientalis* Linn. are most widely distributed. The cockroach can be controlled in dwellings, restaurants and similar situations. One of the most important procedures for ridding premises of these pests is the careful cutting off of their food supply, such as scraps of food or ill fitting food containers. The larger forms can be trapped in a deep, smooth-walled vessel (fruit jar or the like) in which is placed a favorite roach food, such as chocolate or molasses. Sticks leading to the top of the jar enable the roaches to reach the mouth of the jar, whence they tumble into the trap in trying to reach the food. If the trap contains liquid the roaches are drowned; otherwise they must be killed by scalding, burning, oiling or otherwise.

The croton bug is more wary than the larger forms, and can crawl up the sides of a glass jar. A dark box trap with one or more tubular pasteboard entrances projecting both inside and outside is preferable. The inside mouth of the tube must be fitted with a trap door or adhesive substance around the outside of the tube to prevent the roaches from escaping. The bait may be sugar, sweet chocolate or the like. Captured roaches are shaken out into kerosene or hot water.

Borax and sodium fluoride are poisonous to these insects. Equal parts of chocolate or powdered sugar and borax, well mixed (this is important), is one form of a roach powder. This powder should be placed in little heaps, in accessible windows, or in the crevices whence the insects come.

According to Farmers' Bulletin 648, U. S. Department of Agriculture, the most effective material is 50 per cent commercial sodium fluoride mixed with some inert substance, such as powdered gypsum or flour. Marlatt recommends that such a mixture be dusted or blown over shelves, tables, floors and the runways and hiding places of roaches. The insects come out, and die in a few hours. In this way complete extermination is effected within twenty-four hours. Such repellents as eucalyptus oil, oil of citronella, oil of rosemary, and naphthalene may be used where other methods are undesirable. Fumigation with hydrocyanic acid gas, carbon bisulphide or sulphur is successful, but should not be undertaken without experience.

Further material may be found in the following:

Roaches in a Sanatorium, THE JOURNAL, Feb. 15, 1919, p. 515; March 1, 1919, p. 672.
Herus, W. B.: Medical and Veterinary Entomology, ed. 2, New York, the Macmillan Company, 1923.
Girshenfeld, Louis: Ridding the Household of Insect Pests, *Hygeia* **3**: 251 (May), 311 (June), 403 (July), 459 (Aug.), 517 (Sept.), 581 (Oct.), 642 (Nov.), 707 (Dec.) 1925.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.
Arizona: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.
California: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.
Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Connecticut: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
Hawaii: Honolulu, July 12-15. Sec. Dr. A. L. Davis, 1254 Emma Street, Honolulu.
Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.
Kentucky: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.
Maine: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
Massachusetts: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.
Mississippi: Jackson, June 24-25. Sec., Dr. F. J. Underwood, Jackson.
Missouri: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.
New York: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.
North Carolina: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.
North Dakota: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.
Oregon: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.
Pennsylvania: Philadelphia and Pittsburgh, July 6-10. Director Education, C. D. Koch, Harrisburg.
Rhode Island: Providence, July 1-2. Sec., Dr. B. U. Richards, 315 State House, Providence.
South Carolina: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.
South Dakota: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.
Utah: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.
Vermont: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.
Washington: Olympia, July 6. Director, Dept. of Licenses, Mr. Charles R. Maybury, Olympia.
West Virginia: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.
Wisconsin: Milwaukee, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

California March Examination

Dr. Charles B. Pinkham, secretary of the California Board of Medical Examiners, reports the written examination held at Los Angeles, March 8-11, 1926. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Of the 63 candidates examined, 51 passed and 12 failed. Sixty-six candidates were licensed by reciprocity and 6 by endorsement of credentials since the February meeting of the board. The following colleges were represented:

PASSED		Year Grad.	Per Cent
College of Medical Evangelists	(1925)	79.3, 83.1, 83.8, 84.2, 84.7, (1926) 81.3	
University of California Medical School	(1925)		89.8
Yale University School of Medicine	(1925)		83.2
Northwestern University Medical School	(1924)	83.7,	89.7
Rush Med. Coll.	(1919)	85.8, (1923) 90.6, (1924) 85.9, (1925)	78
University of Illinois College of Medicine	(1925)	77.2,	88.4
University of Kansas School of Medicine	(1925)		84.8
University of Louisville School of Medicine	(1925)		81.7
Tulane University of Louisiana School of Medicine	(1925)		81.3
Harvard University	(1923)	83.7, 84.1, 84.6, (1924) 89.4, (1925) 82.6,	84.9
University of Michigan Med. School	(1923)	79.6, (1925) 83.2, 84.6,	85.9
Creighton University College of Medicine	(1925)		83.6
University of Nebraska College of Medicine	(1925)	82.3,	83.6
Syracuse University College of Medicine	(1925)		83.7
University of Oregon Medical School	(1923)		85.2
Jefferson Medical College of Philadelphia	(1923)		84.9
University of Pennsylvania School of Medicine	(1925)		87.2
Woman's Medical College of Pennsylvania	(1925)		77
University of Texas Department of Medicine	(1925)		85.8
University of Manitoba Faculty of Medicine	(1921)		84.1
McGill University Faculty of Medicine	(1901)	84.9, (1920) 81.7,	83.7, (1922) 89.4
University of Berlin, Germany	(1925)*		79.6
University of Freiburg, Germany	(1916)		80.8
University of Heidelberg, Germany	(1922)		75.1
University of Kiel, Germany	(1921)*		81.4
University of Pisa, Italy	(1923)*		83.8
University of Groningen, Netherlands	(1923)*		80
Medico-Chirurgical Institute, Stockholm, Sweden	(1922)*		81.9
University of Berne, Switzerland	(1920)*		78.3

FAILED		Year Grad.	Per Cent
College of Physicians and Surgeons of Los Angeles	(1920)		52
St. Louis University School of Medicine	(1925)		74.6
University of Berlin, Germany	(1913)	53.6, (1916)	72.7
University of Göttingen, Germany	(1925)		74.1
University of Munich, Germany	(1917)		68.6
National University of Athens, Greece	(1923)		58.1
Faculty of Medicine, Guatemala	(1923)*		51.9
University of Budapest, Hungary	(1922)*		71.1
University of Rome, Italy	(1916)		57.1
National School of Medicine, Mexico	(1924)		73.2
School of Medicine and Surgery, Lisbon, Portugal	(1923)		62.7

LICENSED BY RECIPROCITY		Year Grad.	Reciprocity with
Gross Medical College, Denver	(1895)		Colorado
University of Georgia Medical Department	(1924)		Georgia
Chicago College of Medicine and Surgery	(1913)		Illinois
College of Physicians and Surgeons, Chicago	(1900)		Indiana
Hahnemann Medical College and Hospital, Chicago	(1887)	(1909) Oregon	Illinois
Loyola University School of Medicine	(1917),	(1918)	Illinois
Northwestern University Medical School	(1904),	(1911) (1906) Wyoming, (1913) South Dakota	Illinois
Rush Medical College	(1919)		Utah
Central College of Phys. and Surgs., Indianapolis	(1904)		Indiana
Indiana University School of Medicine	(1916)		Indiana
Medical College of Indiana	(1904)		Washington
State University of Iowa College of Medicine	(1910)	(1911), (1915), (1924) Iowa	Wyoming
Kansas Medical College, Topeka	(1907)		Kansas
Kentucky School of Medicine	(1907)		Kentucky
University of Louisville School of Medicine	(1909)		Kentucky
Baltimore Medical College	(1905)		Maine
College of Physicians and Surgeons, Baltimore	(1913)		Maryland
John's Hopkins University Dept. of Med.	(1918),	(1923)	Maryland
University of Maryland School of Medicine	(1924)		Maryland
Harvard University	(1892)		Washington
University of Michigan Medical School	(1892)		Michigan
University of Minnesota Medical School	(1913)		Minnesota
Barnes Medical College	(1909)	Kansas, (1911)	Nebraska
Ensworth Medical College	(1904)		Kansas
Marion-Simms College of Medicine, St. Louis	(1895)		Montana
Washington Univ. School of Med.	(1895)	Colorado, (1913)	Missouri
John A. Creighton Medical College	(1909),	(1913), (1915)	Nebraska
University of Nebraska School of Medicine	(1906),	(1923)	Nebraska
Columbia University College of Physicians and Surgeons	(1898),	(1905), (1923)	New York
Long Island College Hospital	(1895),	(1912)	New York
Syracuse University College of Medicine	(1921)		New York
Cleveland Medical College	(1888)		Utah
Univ. of Cincinnati Coll. of Med.	(1922)	Montana, (1924)	Ohio
University of Oklahoma School of Medicine	(1922)		Wyoming
University of Oregon Medical School	(1907),	(1915)	Oregon
Hahnemann Med. College and Hosp. of Philadelphia	(1904)		Penna.
Jefferson Medical College of Philadelphia	(1905)		New York
University of Pennsylvania School of Medicine	(1923)		Wisconsin
University of Pittsburgh School of Medicine	(1914)		Penna.
Western Pennsylvania Medical College	(1905)		Penna.
Woman's Med. Coll. of Pennsylvania	(1912)	Oregon, (1916)	New Jersey
University of Texas Department of Medicine	(1924)		Texas
University of Toronto Faculty of Medicine	(1920)		Indiana
Trinity Medical College, Toronto, Ontario	(1904)		Iowa
University of Szegedin, Hungary	(1911)*		Illinois
National University of Ireland, Dublin	(1916)*		Montana

ENDORSEMENT OF CREDENTIALS		Year Grad.	Endorsement with
George Washington University Medical School	(1905)		U. S. Navy
Tufts College Medical School	(1910)		U. S. Army
Columbia University College of Phys. and Surgs.	(1915)		U. S. Army
Long Island College Hospital	(1914)		U. S. Army
University of Oregon Medical School	(1913)		U. S. Army
University of Virginia Department of Medicine	(1899)		U. S. Navy

* Verification of graduation in process.

Book Notices

Les tumeurs du cerveau. Par le Professeur Viggo Christiansen, Médecin en chef de l'Hôpital royal du Danemark. Avec une préface du Pr. Pierre Marie. Second edition. Paper. Price, 45 francs. Pp. 398, with 107 illustrations. Paris: Masson & Cie, 1925.

This edition is dedicated to the memory of Charcot. The author states that there have been so many advances in our knowledge of the symptomatology, diagnosis and surgical treatment of intracranial new growths that the book had to be entirely rewritten. Epidemic encephalitis, which is now so prevalent, sometimes simulates brain tumor, and the differential diagnosis between new growth and encephalitis had to be fully considered. As in the previous edition, the subject matter is presented in the form of lectures, which does not make for dry reading in this instance. The style is clear and simple, and the descriptions are lifelike. Especially illuminating and instructive are the discussions of the significance of special symptoms and the frank acknowledgment of errors in diagnosis and failures in therapy. Three chapters are devoted to tumors of the motor region. In paralyses of cerebral origin, the lower is often not as much affected as the upper extremity, because compensation from the other side occurs more often in the leg than in the arm. The sternomastoid, on account of its bilateral innervation, is often unaffected,

while the trapezius is usually paralyzed. Attention is called to the fact that only one group of muscles or even a single muscle may be involved, and that muscle atrophies are frequent in cortical lesions. In tumors of the occipital lobe, the representation of macular vision is not localized but extends over a considerable area in each lobe. Migraine ophthalmique is especially considered in relation to tumors of the base of the brain, and the differentiation between basilar tumors and syphilitic basilar meningitis is often difficult. The chapters devoted to tumors of the chiasmatic region and of the cerebellopontile angle give an excellent summary of our present knowledge of the symptoms of growths in these locations. The roentgen ray often does not show the extent of the changes that exist in pituitary tumors. One eye is often blind when the other still has only a defect in the temporal field of vision. Papilledema is not at all rare in pituitary growths, and may conceal a certain amount of primary optic atrophy. Christiansen believes that papilledema in pituitary tumors may be due not to a general increase of intracranial pressure but to direct pressure on the arteries and veins in the neighborhood of the growth. The chapter devoted to "difficulties in diagnosis" is worthy of careful reading, for it is a fair statement of the diagnostic problems so often encountered, and of the various methods of value for the localization of the growth. In the chapter on operative treatment, technical surgical details are not considered. Decompressive operations often give considerable palliation, but the only real successes are obtained in those cases in which the tumor can be completely removed. Whenever possible, the operation should be done in one stage, and the best results are obtained by those who have devoted themselves as specialists to neurologic surgery. The subject of tumors of the brain is so large that a book on the subject might easily be a large and ponderous volume; but Christiansen has demonstrated how much can be said in a few words when the writer is expert in the recognition and evaluation of clinical symptoms and signs.

ABDOMINAL OPERATIONS. By Sir Berkeley Moynihan. Fourth edition. Two volumes. Cloth. Price, $20 net. Pp. 1217, with 470 illustrations. Philadelphia: W. B. Saunders Company, 1926.

As in previous editions, the bulk of the material is devoted to the stomach, intestines and bile tracts. To detail the contents would be needless; they are too well known to surgeons. There are places where one may take issue with Moynihan. Even today surgery at its best is too frequently a conflict of ideas on the application of mechanical skill in the adjustment of anatomic derangement and malfunction, so a surgeon may justify an arbitrary or dogmatic attitude by logic and by brilliant results. This work is for the most part an exploitation of the author's own opinions and technic, and one reads under the spell of his personality. His ideals are of the highest:

> If I might presume to offer any advice to the surgeon who has not great and continued opportunities for practical work, I would suggest to him never to do gastro-enterostomy in the absence of a demonstrable lesion which requires it, and to leave the surgery of the gallbladder alone. No one acquainted with the truth can deny that far too many operations nowadays are done by those who having perhaps a measure of success in the trivial cases (none are trivial to a patient!) rashly embark on procedures which they are not fully competent to undertake. Surgery, after all, is an affair of the spirit; it is a fierce test of a man's technical skill sometimes; but in a grim or long fight it is above all a trial of the spirit, and there are few things that cannot be conquered if a man's heart is set on victory.

The teachings are those of a master surgeon written in a style that upholds the best traditions of English prose.

TUMORS OF THE COLON AND RECTUM: Their Pathology, Diagnosis and Treatment. By Jerome M. Lynch, M.D., Surgical Director, St. Bartholomew's Hospital, N. Y., and Joseph Felsen, M.D., Attending Pathologist, St. Bartholomew's Hospital, N. Y. Cloth. Price, $12. Pp. 259, with 123 illustrations. New York: Paul B. Hoeber, Inc., 1925.

This is a monograph de luxe, a tale built about beautiful illustrations, for about one fifth of the pages are solely illustrations, really plates, many in colors, making the work quite like an atlas. And with these there are many other fine illustrations. There is a great similarity between the gross and microscopic appearance of some of the different tumors illustrated, more, of course, in their histology, for they are uniformly cylindric-cell carcinomas, called by the authors adenocarcinomas, and for much of this repetition there is no valid excuse. It may occur, indeed, that in the course of time the use of "malignancy" for malignant tumor will conform to the best usage. Its employment, as indicated, is prevalent. But the conception of malignancy includes many characteristics, such as rapid growth, the production of a cachexia, recurrence and metastasis; and to refer to a "malignancy of the descending colon," or of any other part of the colon (pp. 200, 201 and 202) or, for that matter, of any part of the body seems to restrict the term to purely objective significance, to rob it of much of its time-honored value. Anthrax causes a malignant pustule of the bowel, and still other lesions are referred to as malignant. When a malignant tumor is meant, the statement should be malignant tumor, and not "malignancy." Naturally, most of the experience set forth by the authors has concerned carcinoma of the colon, but there is a good review of other tumors of the colon. The bibliography, indexes and many tables, especially those devoted to the results of treatment (4,013 cases), are all excellent. The work is a commendable record of research in surgery of value for reference, for libraries and for the private libraries of surgeons.

CHEMISTRY IN MODERN LIFE. By Svante August Arrhenius, Ph.D., M.D., D.Sc., Director of the Nobel Institute. Translated from the Swedish and revised by Clifford Shattuck Leonard, Ph.D., National Research Fellow, Department of Pharmacology, Yale University. Cloth. Price, $3. Pp. 286, with illustrations. New York: D. Van Nostrand Company, 1925.

Professor Arrhenius, director of the Nobel Institute, and recognized throughout the world as one of the great modern leaders in the field of chemistry, prepared this interesting introduction to his science for Swedish readers. The translation is made available as a part of the library of modern sciences. The book covers briefly all of the relations of chemistry to life, to industry and to the home. The historical background is introduced painlessly, and illustrations from life add to the human interest of the work. The book is an excellent presentation volume for the young man or woman interested in this field.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

DIE BEDEUTUNG DER ROTEN KERNE UND DES ÜBRIGEN MITTELHIRNS FÜR MUSKELTONUS, KÖRPERSTELLUNG UND LABYRINTHREFLEXE. Von Dr. G. G. J. Rademaker. Monographien aus dem Gesamtgebiete der Neurologie und Psychiatrie. Herausgegeben von O. Foerster und K. Wilmanns. Heft 44. Paper. Price, 27 marks. Pp. 340, with 212 illustrations. Berlin: Julius Springer, 1926.

Monograph on brain physiology with especial reference to the red nucleus.

THE X-RAY IN EMBRYOLOGY AND OBSTETRICS. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Professor of Gynecology and Obstetrics and Head of the Department of Obstetrics in the Post-graduate Medical School of Chicago, and Maximilian John Hubeny, M.D., F.A.C.R., F.A.C.P., Editor of Radiology. Cloth. Price $10. Pp. 420, with 259 illustrations. Saint Paul: Bruce Publishing Company, 1926.

Beautifully illustrated volume on special roentgenologic study.

HANDBUCH DER HALS-NASEN-OHREN-HEILKUNDE. Herausgegeben von A. Denker und O. Kahler. Sechster Band. Die Krankheiten des Gehörorgans. Erster Teil. Anatomie. Entwicklungsgeschichte. Physiologie. Pathologie. Untersuchungsmethoden. Therapie. Paper. Price, 96 marks. Pp. 1274, with illustrations. Berlin: Julius Springer, 1926.

Sixth volume of monumental system of diseases of ear, nose and throat.

DIET LISTS OF THE PRESBYTERIAN HOSPITAL, NEW YORK CITY. By Herbert S. Carter, A.M., M.D., Consulting Physician to the Lincoln Hospital. Third edition. Cloth. Price $2. Pp. 173. Philadelphia: W. B. Saunders Company, 1926.

Practical and complete outline of established diets for all conditions in which dietetic management is established.

LES PROBLÈMES DE LA PHYSIOLOGIE NORMALE ET PATHOLOGIQUE DE L'OS. Par R. Leriche, Professeur de clinique chirurgicale à la Faculté de Strasbourg, et A. Policard, Professeur d'histologie à la Faculté de Lyon. Paper. Price, 28 francs. Pp. 229, with 29 illustrations. Paris: Masson et Cie, 1926.

Monograph on pathology of bone.

DIÄTETIK DER MAGEN- UND DARMKRANKHEITEN. Von Prof. Dr. I. Boas. Diätetik und Nachbehandlung bei Operationen am Magen-Darmkanal. Von Prof. Dr. G. Kelling. Second edition. Paper. Price, 12 marks. Pp. 242, with 19 illustrations. Leipsic: Georg Thieme, 1926.

Second edition of standard work on dietetics in gastro-intestinal disease.

THE TECHNIC OF NURSING. By Minnie Goodnow, R.N., Directress of Nurses, Hospitals of the Graduate School of Medicine, University of Pennsylvania. Cloth. Price $2.50 net. Pp. 452, with 207 illustrations. Philadelphia: W. B. Saunders Company, 1926.

Another book of helpful hints for nurses who have to practice medicine.

EMERGENCY SURGERY: The Military Surgery of the World War Adapted to Civil Life. By George de Tarnowsky, M.D., F.A.C.S., D.S.M., Professor of Clinical Surgery, Loyola University Medical School. Cloth. Price $7.50. Pp. 718, with 324 illustrations. Philadelphia: Lea & Febiger, 1926.

Practical help in surgery for the general practitioner.

LES RACES ET LES PEUPLES DE LA TERRE. Par J. Deniker, Docteur ès sciences, bibliothécaire du muséum d'histoire naturelle. Second edition. Cloth. Price, 65 francs. Pp. 750, with 340 illustrations. Paris: Masson et Cie, 1926.

New edition of work on general anthropology first issued in 1900.

CHIRURGIE DU SYMPATHIQUE. CHIRURGIE DU TONUS MUSCULAIRE. La section des rameaux communicants. Par P. Wertheimer, et A. Bonniot, Chirurgien des hôpitaux de Grenoble. Préface du Pr. Leriche. Paper. Price, 22 francs. Pp. 134, with 21 illustrations. Paris: Masson et Cie, 1926.

Technical monograph on sympathectomy.

MASSAGE UND GYMNASTIK IM DIENSTE DER KOSMETIK: Beiheft zum Handbuch der Massage und Heilgymnastik. Von Dr. Fr. Kirchberg, Lektor für Massage und Heilgymnastik an der Universität Berlin. Boards. Price, 3.90 marks. Pp. 99 with 26 illustrations. Leipsic: Georg Thieme, 1926.

Massage for wrinkles and fat removal.

TROUBLES DES ÉCHANGES NUTRITIFS; PHYSIOLOGIE-PATHOLOGIE-THÉRAPEUTIQUE. Volumes 1 and 2. Par Ch. Achard, Professeur de clinique médicale a la Faculté de médecine de Paris. Paper. Price 110 francs. Pp. 1220, with illustrations. Paris: Masson et Cie, 1926.

French consideration of general metabolic disturbances.

HANDBUCH DER MASSAGE UND HEILGYMNASTIK. Von Dr. Med. Franz Kirchberg, Lektor für Massage und Heilgymnastik an der Universität Berlin. Band I. Paper. Price, 14.40 marks. Pp. 279, with 90 illustrations. Leipzic: Georg Thieme, 1926.

Scientific consideration of massage and gymnastics.

NURSES' STATE BOARD QUESTIONS AND ANSWERS. By R. Max Goepp, M.D., Professor of Principles and Practice of Medicine and of Clinical Medicine at the Woman's Medical College of Pennsylvania. Cloth. Price, $2.50 net. Pp. 373. Philadelphia: W. B. Saunders Company, 1926.

First aid to the doubtful in nurses' exams.

HANDBUCH DER BIOLOGISCHEN ARBEITSMETHODEN. Herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden, Direktor des physiologischen Institutes der Universität Halle a. d. Saale. Abt. V, Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 5 B, Heft 4. Methoden zur Untersuchung des überlebenden Zentralnervensystems. Von Hans Winterstein. Die Methoden zur Funktionsprüfung von Muskeln und Nerven beim Menschen mittels des galvanischen und faradischen Stromes. Von Georg Grund. Lieferung 188. Paper. Price, 3.90 marks. Pp. 428-510 with illustrations. Berlin: Urban & Schwarzenberg, 1926.

AMERICAN POCKET MEDICAL DICTIONARY: Containing the Pronunciation and Definition of all the Principal Terms Used in Medicine, Surgery, Dentistry, Veterinary Medicine, Nursing and Kindred Sciences: With Over 60 Extensive Tables. By W. A. Newman Dorland, A.M., M.D., Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. Thirteenth edition. Leather. Price $2 net. Pp. 777. Philadelphia: W. B. Saunders Company, 1926.

OUR TIMES: The United States, 1900-1925. Vol. I. The Turn of the Century. By Mark Sullivan. Cloth. Price, $5. Pp. 610, with illustrations. New York: Charles Scribner's Sons, 1926.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume forty-three. Philadelphia, 1925.

Medicolegal

Right to Results of Laboratory Analysis of Organs

(Travelers' Ins. Co. v. Jackson, Judge (Iowa), 206 N. W. R. 98)

The Supreme Court of Iowa says that, in an action on a policy of accident insurance which expressly excluded liability for death by suicide, the insurance company averred that the death of the insured resulted from suicide. A necropsy on the body was conducted by two physicians selected by the plaintiff in that case and by two other physicians selected by the insurance company, all of whom acted in cooperation. Then the two physicians representing the company took certain organs from the body for a laboratory analysis, it being averred on one side, and denied on the other, that those physicians agreed that the results of the analysis should be communicated to the physicians for the plaintiff. That the plaintiff subsequently obtained from the district court an order that the insurance company should produce and furnish to the plaintiff "all papers, findings, records, entries and memoranda of laboratory analyses and inspection of the tissues and vital organs" of the insured, in its possession or under its control, as would tend to show that his death was due to an accident. That order was made under the provision of section 4654 of the Iowa code that the district court may in its discretion, by rule, require the production of any papers or books which are material to the just determination of any cause pending before it, for the purpose of being inspected and copied by or for the party calling for them. The legality of the order made was challenged in this proceeding, by certiorari, to test it.

The only showing in support of the application for the order was that there had been a laboratory analysis. Perhaps it ought to be assumed that such laboratory analysis would contain many details which could be safely preserved only by committing them then and there to paper. There was no showing that there was in existence any other paper, record or finding which could in any manner serve any purpose to the applicant as material and admissible evidence. It was, however, suggested, and assumed in argument, that the two physicians who represented the insurance company had communicated, perhaps by letter, with the company, and had expressed opinions including doubts on various features of the necropsy and of the laboratory analysis. No reason was apparent why such sweeping terms should be used in the order unless they were intended to include all communications by such physicians to their own employer on the subject under consideration. Manifestly, such "papers" would not be admissible in evidence. It might be that if the necropsy disclosed all the vital organs to be normal and healthy, such fact might be material and proper to be considered in connection with other facts tending to show accidental death. But that the applicant was not entitled to the production of private letters, or communications, or memoranda, or opinions, or findings, by the two physicians to the insurance company as their employer, was quite clear. None of such items would be admissible as instruments of evidence, though the applicant might gain practical advantages in the trial of the case, because of their perusal. The statute, however, cannot be used to such an end. To say the least, therefore, the order was too broad.

Could the direct results of the laboratory analysis be deemed a "paper" within the meaning of the statute? Must it be assumed that those results were committed to paper? As against this, it was to be said that both parties in the presentation of their case here had assumed that the results of the analysis were committed to paper, and that this was furnished to the insurance company. In view of the fact that the results of the laboratory analysis would be material on the trial, and that they would be provable in some manner, and that the insurance company had the exclusive access to them, and that no other analysis was practicable, the supreme court is disposed to solve the doubt in favor of the order of the trial court at this point, and to let the order stand so far as it relates to the direct results of the laboratory analysis.

The order will be modified so as to require the insurance company to furnish a copy of the direct results of the laboratory analysis, and to exempt it from furnishing private correspondence or memoranda or expressions of opinion as between it and the physicians employed by it. To this extent the order of the district court will be annulled, and in all other respects affirmed.

Eye Made Not to Coordinate with Other Counted Loat

(Suggs v. Ternstedt Mfg. Co. et al. (Mich.), 206 N. W. R. 490)

The Supreme Court of Michigan says that the plaintiff, by an accident that arose out of and in the course of his employment, received an injury by a particle of steel becoming embedded in his right eye. As a result of the injury, a traumatic cataract formed, which was removed by an operation. After the operation he had one-sixtieth normal vision without the use of a glass, while with a strong glass his vision with that eye was above normal, but his two eyes did not coordinate. If he used the uninjured eye, he could not wear the strong glass on the other. If he used the injured eye with the strong glass, he had to cover the other eye. In other words, the testimony established that, while he had useful vision with each eye, he could use but one of them at a time. Under these circumstances the department of labor and industry held that he was entitled to the statutory compensation for the loss of an eye, and the award which it granted is affirmed by the supreme court.

What Expert Testimony Should Do—Injury to Vision

(City of Kingfisher et al. v. State Industrial Commission et al. (Okla.), 242 Pac. R. 217)

The Supreme Court of Oklahoma, in affirming an award of compensation made by the industrial commission, says that the claimant while in the employ of the city of Kingfisher as assistant engineer in the water works department had some boiler compound of soda, ash and lime splash out of a tank into his face and right eye, injuring his vision. Very much of the expert evidence in the case was conflicting, inconsistent and unintelligent. Expert testimony should serve the purpose of making clearer to the ordinary mind facts that are obscure and understood only by scientific study, skill and experience, and such testimony should be definite and certain, and explanatory of the point under consideration.

With regard to compensation under the workmen's compensation law of Oklahoma, the court holds that where the injured employee has lost all practical use of an eye as a result of an injury, such employee is entitled to compensation irrespective of his ability to continue to perform the work in which he was engaged at the time of his injury. The test as to the rights of an injured employee to receive compensation is dependent only on his having received an accidental personal injury resulting in such a permanent partial disability as is provided for in the schedule of the compensation law.

Diseased "Alien Seamen" to Be Treated in Hospitals

(United States v. New York & Cuba Mail S. S. Co. (U. S.), 46 Sup. Ct. R. 114)

The Supreme Court of the United States holds that the term "alien seamen" means seamen who are aliens, as it is used in the act of 1920, which provides that alien seamen found on arrival in ports of the United States to be afflicted with any of the disabilities or diseases mentioned in section 35 of the Alien Immigration Act of 1917, including any loathsome or dangerous contagious disease, shall be placed in a hospital designated by the immigration official in charge at the port of arrival and treated, all expenses connected therewith to be borne by the owner or master of the vessel; and that where a cure cannot be effected within a reasonable time the return of the alien seamen shall be enforced on or at the expense of the vessel on which they came. In other words, the term "alien seamen" means, not seamen on foreign vessels only, but aliens employed as seamen on any vessel arriving in the United States; and it was intended to extend the provisions of section 35 by providing that the hospital expenses incurred in treating any such diseased alien should be borne in all cases by the vessel bringing him in, whether carrying passengers or freight, and without reference to the time when the disease might have been detected. Nor, when applied to American vessels, is the act as thus construed repugnant to the due process cause of the fifth amendment to the constitution, on the ground of imposing liability without causation or causal connection. The power of Congress to forbid aliens and classes of aliens from coming within the borders of the United States is unquestionable. This power may be exercised in reference to alien seamen as well as other aliens, and if they are found to be diseased when brought into an American port, the vessel, whether American or foreign, may lawfully be required to bear the expenses of their medical treatment.

Competence of Physician to Give Opinion on Sanity

(Commonwealth v. Cavalier (Pa.), 131 Atl. R. 229)

The Supreme Court of Pennsylvania, in affirming a judgment of conviction of the defendant of murder in the first degree, says that the defense attempted to be made for him was that he was mentally incompetent and insane at the time of the killing. To meet that defense the commonwealth called, among other witnesses, a physician who, in answer to a hypothetic question, gave it as his professional opinion that the defendant knew the nature and quality of his act, and could distinguish between right and wrong. It was urged that the physician was not competent to express an opinion. He was a practicing physician, a graduate of the University of Pennsylvania, and at the time of the trial had been engaged in the practice of his profession for between four and five years. He was at no time connected with an institution having for its main purpose the treatment of mental disease, and had not seen many cases of insanity. He had as a part of his medical education studied the subject of insanity, and would appear to have at least the general knowledge of the subject that the ordinary medical practitioner has. The question of the competence of a witness to testify as an expert is usually for the discretion of the trial court, and the supreme court is not convinced that there was an abuse of discretion in receiving the testimony. It would be an impracticable thing to lay down a hard and fast rule as to how much experience a practicing physician must have had with insane persons to qualify him to speak as an expert. The supreme court thinks that the determination of this question is wisely left with the trial judge, who has the witness before him, and is better competent than the supreme court is to judge of his capacity to express an opinion. The weight to be given his opinion is, of course, for the jury.

Action for Not Properly Furnishing Treatment Barred

(Chalmers v. Southern Pac. Co. (U. S.), 8 Fed. R. (2d) 480)

The United States Circuit Court of Appeals, ninth circuit, in affirming a judgment of nonsuit, says that the complaint stated that while the plaintiff was in the employ of the defendant and it was under contract, in consideration of a payment by him of 75 cents a month, to furnish him with medical and surgical treatment in case of injury, he suffered an injury and by reason of the defendant's failure to use roentgen-ray appliances to diagnose the broken bone the treatment furnished proved valueless. The question presented for consideration here was the character of the action. Whatever might be said of the cause of action disclosed by the complaint, the court saw no escape from the conclusion that the cause of action disclosed by the testimony was an action ex delicto (for a wrongful act or neglect), within the meaning of the statute of limitations of the state of California, as construed by its highest court, because under the testimony the alleged breach of contract consisted, not in a failure or refusal to furnish medical and surgical treatment or hospital care and attention, but in a failure to furnish medical and surgical treatment with due care and in a proper manner. Therefore, under the settled rule in California, the cause of action disclosed by the testimony was barred after one year by the statute of limitations.

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.
Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-First Annual Meeting, held at Atlantic City, N. J., May 4-5, 1926

(Continued from page 1862)

The Circulation and Its Measurement

DR. H. W. HAGGARD, New Haven, Conn.: In this study we tried to find out what reserve the heart might have. We took fifty students, many of them good athletes. We first measured the stroke index; but this is disturbed by the pulse, which shows variations during effort. One man rode a bicycle till he fell off; at first the pulse went up, and later fell. There are two compensatory mechanisms affecting this: 1. Value of the heart as a pump. 2. The amount of oxygenation of the blood. We find that the output of the heart remains the same at rest as in exercise. There is an increase up to the maximal point, but this cannot be raised. When we measure the amount from the resting point to the maximal output, we find that the best heart has the largest range. There is an increased oxygen consumption of 3,400 per minute, which is the greatest increase from resting. The man with the greatest increase in oxygen consumption has the best heart. The best rate showed an increase of five and one-half times from resting, the worst man had an increase of two. This is the difference in the grading of men as regards cardiac reserve.

DISCUSSION

DR. G. CANBY ROBINSON, Nashville, Tenn.: The blood flow is diminished when patients sit up, and further diminished when they stand. We are accustomed to believe that the circulatory effect has something to do with diminished output of the heart. Patients improve when they assume a sitting position, so we can say that patients improve when the output is actually diminished. We have studied the output of the heart under the influence of digitalis in animals, using the Trick method. The output is about 25 per cent less. Here we have some evidence that the circulation may be improved when the outflow of the heart is increased. I believe that the balance between the two sides of the heart is more readily adjusted when the heart is putting out less blood than when there is increased amount of blood.

DR. B. S. OPPENHEIMER, New York: We have been measuring blood flow by the method of Henderson and Haggard, in twenty-one normal subjects and sixteen cases of valvular disease, and in hypertensive disease with and without auricular fibrillation. In the normal cases the results were sufficiently consistent to be satisfactory. They agreed with the Henderson and Haggard figures. In the cardiac cases, the results were consistent, but there is a certain degree of dyspnea in most cases. There was reduction of the outflow per minute, with smaller output per day. There was also increase of consumption of arterial oxygen.

DR. CHARLES F. HOOVER, Cleveland: In cardiac patients with retention of body fluids, the clinician has difficulty in demonstrating where the accumulation of blood may be, where the failure in hydraulics of the circulation occurs. Cardiac failure and failure in hydraulics are not the same thing. We have seen patients with great respiratory distress make very satisfactory progress, but we could not prove any difference in volume flow. We tried studying heat loss by air from the lung, but there was no evidence of genuine hydraulic failure. We must differentiate between circulatory failure and hydraulic failure.

Blood Flow During Rest and Exercise in Normal Man

DRS. A. V. BOCK, L. M. HURXTHAL, J. F. LAWRENCE and D. V. DILL, Boston: We have made a special study of the work of the heart during rest and exercise. There is a remarkable shift of blood being pumped from the heart with change of position. When the subject sits in a chair the blood flow drops from 20 to 30 per cent from the prone position, and on standing there is a drop of from 40 to 50 per cent. These changes account, perhaps, for the feeling of fainting or dizziness both in the well and in the sick. The pulse pressure is completely lost when the subject faints. In our tests we have had the subjects standing at attention in a rigid upright posture. The standing position is necessitated by gravity for returning blood to the right side of the heart, and the vital capacity is increased from 6 to 8 per cent when standing. In cardiac cases there is a change of from 25 to 30 per cent when the patient is standing; thus, the change is much increased in the cardiac patient. This is at variance with the old theory that the vitality capacity is a mechanism purely related to the movement of the costal muscles. In regard to the reactions of the body to exercise, determinations of the blood flow in patients on a stationary bicycle were made, the work being 15 miles an hour, pulling 9 pounds weight. There were 15 liters a minute increase in blood flow. The oxygen consumption per minute and blood flow were increased with increased metabolism. We found that there was a steady coefficient of utilization of oxygen up to 1,200 cc. of blood. The pulse rate bears relation to the total ventilation curve. We found that the amount of oxygen taken out of the inspired air is definitely limited, and the same thing is true of the amount of carbon dioxide utilization. The body seems to make an effort to keep the percentage of carbon dioxide in the body at a constant figure. There is at present considerable mystery as to what is back of the maximum of respiration; that is, what is keeping the body in a steady condition of carbon dioxide elimination.

Clinical Physiology of the Stomach

DRS. A. L. BLOOMFIELD and C. S. KEEFER, Baltimore: We have made studies of the pure gastric juice with its hydrogen ion content in gastric motility. First we did an estimation of the secretion during a ten minute period in different individuals. We found differences of from 10 to 70 cc. of juice in ten minutes, and in normal persons it varies from 10 to 40 cc. The total acid of the pure juice varies from 120 cc. to zero. We found no reason to believe that the total acid was less normal at 20 than when it was 60. We expected that there would be a relation between the volume of secretion and the degree of acid, but there is no relation at all. There was no relation found between the volume of the secretion and the total volume of fluid and the emptying of the stomach. Some stomachs empty very quickly. The emptying time of the stomach varies from fifteen to ninety minutes. The emptying of the stomach presented no relation to the acid content. Persons were examined under basal conditions with repeated observations to see whether they were more or less constant from week to week. It was found that curves corresponded very closely in the same subjects. The amount of acid is a constant feature. The volume of secretion is fairly constant. The motility has great variation in the same subject on different occasions.

DISCUSSION

DR. W. E. DIXON, Oxford, England: The point of view of physicians is that the contents of the duodenum are passing to the stomach and back from the stomach to the duodenum. It can be proved that the amount of acid varies from time to time, within a few minutes when there are two tubes in different parts of the stomach. Different degrees of acidity and different degrees of digestive power can be observed. The old idea that the acid of the stomach has to do with the pancreas is entirely wrong.

DR. A. L. BLOOMFIELD, Baltimore: The matter of bile regurgitation was absolutely controlled in these subjects. Although these volumes were passed in ten minute intervals, the study of the secretion was done over an hour or more on

the stomach; therefore the studies show that the secretion is more constant.

So-Called Lipoid Nephrosis

DRS. LOUIS M. WARFIELD and F. D. MURPHY, Milwaukee: The "large white kidney" has been described for many years. It has been found that tubular lesions were not due to inflammatory degeneration. Some observers, however, believe that the cases are preceded by glomerular nephritis, but it is not really proved whether glomerular nephritis precedes or follows. The disease is insidious. It is usually seen in young persons; it begins with headache and malaise, but kidney function is good. The urine shows crystals (doubly refracting lipoids), probably cholesterin esters. We feel that the lesion in these cases has something to do with the colloid metabolism of the body. The cases go from onset to death without any inflammatory symptoms. Probably it is not the result of a chronic inflammatory lesion, but lipoid degeneration of the kidney may follow glomerular nephritis. A characteristic of these lipoid nephroses is the edema, which is fluctuating and does not seem to be influenced by treatment. We did not get much result from thyroid treatment, but it has some effect. The prognosis in these cases is fairly good. The differentiation between pure lipoid nephrosis and glomerular nephritis with secondary degeneration of the tubules is often difficult. We have a patient under observation who had an attack of glomerular nephritis last September. At present he is in a quiescent stage. The kidney function tests show normal fluid. The blood cholesterol is high. Doubly refracting lipoids have not been found yet, but we shall find them soon. This type of case has been confused with pure lipoid nephrosis. The characteristic feature is the periodicity of the edema. The diagnosis of these conditions does not depend on any test, but is based on fulfilment of the reactions enunciated by us and on the findings of those who have followed the disease through its course to the postmortem examination.

DISCUSSION

DR. D. VAN SLYKE, New York: We have had cases that have had every characteristic of Dr. Warfield's cases, with good function and normal blood pressure, intense albuminuria, that seem to be in every way typical of pure lipoid nephrosis. The patients gradually develop urea retention, and two have died from characteristic uremia. I do not know whether these cases started as a pure nephrosis or whether they were cases of acute glomerular nephritis. This may be the secondary stage. Nephrosis, perhaps, may be expected to follow kidney insufficiency, uremia.

DR. J. P. O'HARE, Boston: There are two points worthy of emphasis. There are two ways of making a diagnosis. In subacute glomerular nephritis there is a similar sediment with red blood cells, yet not small round tubule cells. In uncomplicated nephrosis, there are no cells at all and but rarely red blood cells. Nephrosis of this type ordinarily reacts better to diuretics such as calcium than does glomerular nephritis.

DR. LOUIS M. WARFIELD, Milwaukee: I do not know how to make the diagnosis, except to follow the cases a long time. When there are red blood cells in the urine, it cannot be a pure case of nephrosis, but has an inflammatory condition added.

Results of Thyroidectomy for Hyperthyroidism as Indicated by Examination a Year or More Following Operation

DR. CHARLES A. ELLIOTT, Boston: Severe hyperthyroidism is a progressively injurious disease and should be controlled. A subtotal thyroidectomy stopped symptoms in seventy-one out of seventy-four hyperthyroid cases; three patients were myxedematous. There was permanent visceral injury in forty-seven out of sixty-four cases, and thirty-seven cases with residual injury. In twelve patients, permanent disability was evident.

DISCUSSION

DR. JOSEPH L. MILLER, Chicago: I should like to ask whether Dr. Elliott noticed any deleterious effects from the use of iodine in any cases of toxic adenoma.

DR. N. B. FOSTER, New York: I should like to confirm one observation, and that is that we occasionally see favorable results following iodine administration in toxic adenoma. Occasionally cases respond to thyroxin, which should make them worse.

DR. W. M. BOOTHBY, Rochester, Minn.: Dr. Elliott's report agrees in the main with the experience of many of us. His report of improvement with iodine in the adenomatous goiter is larger than we obtain. The differential diagnosis varies in different places. On the more strict classification of the adenomatous goiter, the reports of improvement of cases of adenomatous goiter will be less than if the classification is made on a more liberal basis. If they have symptoms characteristic of the disease they are almost invariably controlled. On the other hand, adenomatous goiter with hyperthyroidism is not predictable, and the case may or may not be made better with iodine; it may be made worse. There is one other guide, an important point which must be remembered in making postoperative observations, and that is the question of parathyroid insufficiency. We are beginning to observe this in the postoperative studies of maximal subtotal thyroidectomies; there is a more frequent occurrence of permanent parathyroid insufficiency. There is developing what we should recognize as a new syndrome. We have seen nothing like it before. This syndrome is often confused with a myxedematous syndrome, while there is no real myxedema. There are no obvious symptoms of tetany. The tetanic symptoms have been adjusted, yet the essential picture is one of weakness and plastic immobility.

DR. CHARLES A. ELLIOTT, Boston: I give iodine in the exophthalmic goiter cases with the certainty of getting results and knowing that the metabolic rate will go down. Then we feel that operation is a safe procedure. In the toxic adenomatous group we give iodine under careful observation, realizing that some of these patients are apparently made worse. I was surprised in adding up the figures in this small group to find that there was very little difference in the response to iodine in the two groups. I said nothing about postoperative tetany. We have noticed that, especially in the last six months. The cases so far have been mild and respond to the specific hormone. We do not know what the ultimate outcome may be. So far as the use of iodine during the postoperative period is concerned, the experimental work of Narine has justified us in the assumption that hyperplasia of the thyroid does not occur readily in the presence of iodine; therefore one method is the routine giving of iodine postoperatively.

Hypothyroidism as a Cause of Intractable Constipation

DR. THOMAS R. BROWN, Baltimore: In patients with intractable constipation, with sluggishness in motility, increase of weight, and in whom a resection of the colon seems to be the only mode of relief, we have suggested the use of thyroid extract, 6 grains (0.4 Gm.) daily, continued for as long a time as is needed to relieve the symptoms entirely. We have studied the influence of thyroid function on intestinal motility, and have made 199 readings in two years. The majority of the patients were women in the fourth to sixth decades of life. Digestive disturbance and constipation were the chief complaints. In half of these patients the basal metabolic rate was from —10 to —19. A few had hyperthyroidism. Cases occurring in more than one member of a family suggested a familial relation. The symptoms usually included more or less mental dulness, darkness of the skin, mental fatigue and digestive disturbance. Most of these patients had been told that they had intestinal toxemia. All but three had marked constipation. In nine it was intractable. Roentgen-ray examination showed that the position of the stomach and colon was normal. Small doses of thyroid extract seemed to have a beneficial effect; in the intractable cases it seemed to be the only thing that produced effect. Constipation returned when the drug was stopped; therefore it was found that it should be continued indefinitely. The dose was from one-fourth grain to 6 grains (from 0.016 to 0.4 Gm.) daily.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

126: 237-495 (April) 1926

Nutritive Value of Various Layers of Wheat and Corn Kernel. A. Klein, B. Harrow, L. Pine and C. Funk, New York.—p. 237.

*Nature and Time Relations of Compression Sounds of Korotkov in Man. H. M. Korns, Cleveland.—p. 247.

Egg Yolk as Source of Antiscorbutic Vitamin. J. E. Dougherty, Madison, Wis.—p. 265.

Effects Obtained from Feeding Fresh Suprarenal Cortex, Medulla and Whole Gland to Standard White Rat. E. B. McKinley, New York, and N. F. Fisher, Chicago.—p. 268.

Brain Stem: Conditions Under Which Extract of Posterior Lobe of Hypophysis Causes Increase in Body Temperature. F. T. Rogers, Dallas, Texas.—p. 284.

Effect of Amytal Anesthesia on Response to Intravenous Injection of Glucose. H. M. Hines, J. D. Boyd and C. E. Leese, Iowa City. —p. 293.

Effects of Roentgen Ray on Pancreas. N. F. Fisher, J. T. Groot and A. Bachem, Chicago.—p. 299.

*Formation of Bile Pigment from Hemoglobin. F. C. Mann, C. Sheard, J. L. Bollman and E. J. Baldes, Rochester, Minn.—p. 306.

*Hydrogenated Vegetable Oil as Source of Vitamin E. C. Kennedy and L. S. Palmer, St. Paul.—p. 316.

Electric Capacity of Animal Tissues Under Normal and Pathologic Conditions. G. W. Crile, A. F. Rowland and G. H. Crile, Cleveland. —p. 320.

*Diet in Relation to Reproducing and Rearing of Young. I. Vitamin E. V. E. Nelson, R. L. Jones, V. G. Heller, T. B. Parks and E. I. Fulmer, Ames, Iowa.—p. 325.

Id. II. A. E. Guest, V. E. Nelson, T. B. Parks and E. I. Fulmer, Ames, Iowa.—p. 339.

*Roentgen-Ray Observations of Hunger Contractions in Man. F. T. Rogers and C. L. Martin, Dallas, Texas.—p. 349.

Respiratory Changes During Airplane Flight to High Altitudes. E. C. Schneider, New York, and R. W. Clarke, Middletown, Conn.—p. 354.

Permeability of Living Cells. VI. Penetration of Certain Oxidation-Reduction Indicators as Influenced by p_H; Estimation of r_H of Valonia. M. M. Brooks, Washington, D. C.—p. 360.

Estimation of Surface Area of White Rat. G. G. Carman and H. H. Mitchell, Urbana, Ill.—p. 380.

Effect of Excessive Amounts of Vitamin B on Basal Metabolism of Rats of Different Ages. H. H. Mitchell and G. G. Carman, Urbana, Ill. —p. 385.

Composition of Gains in Weight and Utilization of Food Energy in Growing Rats. H. H. Mitchell and G. G. Carman, Urbana, Ill.— p. 398.

Action of Acids on Turtle Heart Muscle: Penetration of Anions. H. W. Smith, Boston.—p. 411.

Nerve Impulse. II. Decrement. H. Davis, A. Forbes, D. Brunswick and A. M. Hopkins, Boston.—p. 448.

Production of Some of Phenomena Peculiar to Parathyroid Overdosage in Dogs by Means of Certain Inorganic Salts. J. B. Collip, Alberta, Canada.—p. 472.

Site of Reabsorption in Kidney Tubule of Necturus. H. L. White and F. O. Schmitt, St. Louis.—p. 483.

Compression Sounds of Korotkov.—Contributory evidence is brought forward by Korns in support of the reasonable assumption that the mechanism which operates to produce the Korotkov sounds in man is identical with the water hammer action that Erlanger has found to be the cause of arterial sounds in animals. Furthermore, it is demonstrated that initiation of the hydraulic impact of water hammer is characterized by sound vibrations of relatively short period. The general similarity of the vibrations at all levels of decompressing pressure indicates that the Korotkov sounds originate in an impact at one fixed spot. There is no evidence that eddies or whorls contribute to sound production. Division of the Korotkov sounds into so-called "phases" seems unwarranted. It is suggested that in this respect the clinical conception of the sounds is in need of revision.

Formation of Bile Pigment from Hemoglobin.—The investigations made by Mann et al. have proved that: Bilirubin is formed in the spleen and marrow; it is formed from hemoglobin; hematin appears as an intermediate product in the formation of bilirubin from hemoglobin.

Hydrogenated Vegetable Oil Source of Vitamin E.—Kennedy and Palmer show that successful reproduction can be secured in three successive generations of rats on the Evans and Bishop sterility diet when lard is replaced by hydrogenated vegetable oil. It may be inferred from these observations that hydrogenation does not destroy the fertility factor, vitamin E.

Diet and Reproduction.—It appears to Nelson et al. that data are by no means conclusive for the existence of unknown dietary factors for reproduction and milk secretion.

Study of Hunger Contractions.—Rogers and Martin observed that the type I hunger contractions of Carlson's classification are essentially strong circular contractions of the lower half of the stomach, involving particularly a band of muscle near the junction of the middle and lower thirds of the stomach. This type of hunger contraction may or may not be associated with active peristalsis. Type III contractions consist of active peristaltic waves running over a hypertonic stomach.

American Journal of Roentgenology and Radium Therapy, New York

15: 295-398 (April) 1926

Roentgen-Ray Diagnosis of Pedunculated Growths and Gastric Mucosa Prolapsing Through Pylorus. E. L. Eliason, E. P. Pendergrass, and V. W. M. Wright, Philadelphia.—p. 295.

*Additional Roentgen-Ray Signs of Chronic Gastritis. A. Bassler, New York.—p. 323.

Subacute Intestinal Obstruction with Unusual Dilatation of Colon, Shown Roentgenographically. E. W. Lipschutz, New York.—p. 326.

Myositis Ossificans Progressiva. L. F. Magruder, Norfolk, Va.—p. 328.

Roentgen-Ray Treatment of Spontaneous, Posttraumatic and Postoperative Coccus Infections and Suppurations. Holzknecht, Vienna.—p. 332.

Broad Ligament Extension in Carcinoma of Cervix. C. L. Martin and F. T. Rogers, Dallas, Texas.—p. 336.

Protection of Technical Assistants and of Those Handling Large Quantities of Radium or Radon. C. H. Viol, Pittsburgh.—p. 345.

Dosage Tables as Aid to Simplification of Roentgen-Ray Technic by Cross-Fire Method. W. L. Mattick and W. Stenström, Buffalo.—p. 360.

New Radium Applicator for Treatment of Uterine Carcinoma. G. E. Pfahler, Philadelphia.—p. 365.

Roentgen-Ray Signs of Chronic Gastritis.—The lesser and greater curvatures of the stomach are in regular outline even when the peristaltic waves are active in the properly fitted, normal stomach. Bassler finds that, in well-established chronic gastritis, the regular line is much changed in appearance, as some of the ulcerated states of the left colon and sigmoid testify. Often in chronic gastritis, numerous small indentures and bulgings, none of them much more than a centimeter in depth or height, are seen along the greater curvature, but only occasionally along the lesser. With this the whole stomach displays a lack of regular, large, sweeping peristaltic phenomena—the waves, when of some size, being irregular and in other instances the whole organ being bag-like and inactive as far as normal peristalsis is concerned. This serration of the greater curvature outline may be definitely localized such as in the pyloric region and at the base of the cap, or, as is most often seen, in the lower two thirds of the greater curvature. The third important point in the finding is that the irregularity of the lower outline is noted only in the films or observations made in the prone position and is completely obliterated in those made in the upright. Bassler's explanation of this phenomenon is that in organic disease of the mucosa of the stomach, when deep enough to comprise involvement well into the mucosa, the fibrils into it from the nervous plexus under it are cut off or the function distributed so that normal peristaltic phenomena are interfered with. Instead, then, of stimuli passing along through the stomach walls in succession of stimulation and inhibition, thus producing the large and regular normal peristaltic waves, the whole mechanism is thrown out of regularity and the waves are made hectic and local only here and there. The latter are mostly brought about by lack of proper passing of stimulation in a circular way around the organ, producing in a transverse line across the stomach the phenomena of contraction, dilatation and inactivity on the line in different locations. The interference with the proper nerve function likewise diminishes the power of such waves as are present, thus making the organ more bag-like, which, when the disease of the mucosa is general, increases the capacity of the organ (dilatation) but does not do this if the catarrhal process is localized such as in the pyloric region.

Annals of Otology, Rhinology and Laryngology, St. Louis

35: 1-248 (March) 1926

Operation for Removal of Sphenopalatine Ganglion. E. C. Sewall, San Francisco.—p. 1.
Anatomic and Surgical Consideration of Certain Cervical Abscesses Complicating Mastoiditis: Report of Cases. I. D. Kelley, Jr., St. Louis.—p. 23.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis: Effects on Larynx. J. P. Dworetzky, Liberty, N. Y.—p. 42.
Unusual Ethmoidal Finding. S. R. Skillern, Philadelphia.—p. 71.
Mucous Glands of Palate in Relation to Upper Pole of Tonsil. H. L. Baum, Denver.—p. 87.
Aural Quackery and Pseudomedicine. A. J. Cramp, Chicago.—p. 91.
Influence of Partial and Complete Occlusion of External Auditory Canals on Air and Bone Transmitted Sound. A. G. Pohlman, St. Louis, and F. W. Kranz, Geneva, Ill.—p. 113.
Auditory Facts and Theories. V. O. Knudsen, Berkeley, Calif., and I. H. Jones, Los Angeles.—p. 122. C'td.
Congenital Occlusion of Choanae. K. A. Phelps, Minneapolis.—p. 143.
Hyperthyroidism: Significance in Otolaryngology. J. M. Waugh, Cleveland.—p. 152.
Significance of Science of Speech Correction. M. A. Goldstein, St. Louis.—p. 161.
New Methods and Apparatus for Testing Hearing. H. Fletcher, New York.—p. 165.
Mastoiditis in Diabetes Complicated with Diabetic Facial Paralysis. E. M. Seydell, Wichita, Kan.—p. 181.
Treatment of Common Head Cold. F. N. Sperry, New Haven, Conn.—p. 192.
Atmospheric Factor in Causation of Colds. W. A. Wells, Washington, D. C.—p. 199.
Bronchoscope as Aid for Performance of Tracheotomy. F. O. Lewis, Philadelphia.—p. 211.
Globus Hystericus Frequently Sexual Neurosis. J. B. Potts, Omaha.—p. 213.

Archives of Otolaryngology, Chicago

3: 301-402 (April) 1926

Surgical Diathermy in Laryngology. G. B. New, Rochester, Minn.—p. 301.
Cancer of Larynx. J. E. MacKenty, New York.—p. 305.
*Use of Physical Agents in Partial Deafness. A. R. Hollender and M. H. Cottle, Chicago.—p. 338.
Gradenigo's Syndrome in Mastoid Disease: Report of Case. H. Dintenfass, Philadelphia.—p. 349.
Cholesteatomatitis. M. Metzenbaum and O. Eisinger, Cleveland.—p. 353.
Needle Gone Astray (in Rosenmueller Eminence). S. Cohen, Philadelphia.—p. 357.
Laryngeal Stenosis. H. Meyersburg, New York.—p. 358.
Fibroid Tumor of Eustachian Tube. J. G. Hunt, London, Ont.—p. 363.
Lateral Tilting Table. S. Iglauer, Cincinnati.—p. 364.
Tonsils and Adenoids. A. W. Proetz, St. Louis.—p. 365.

Treatment of Partial Deafness.—Clinical experience in a fairly large series of cases has demonstrated to Hollender and Cottle that electrophysical therapy is of some value in chronic catarrhal deafness even after other accepted measures have failed. The improvement obtained is dependent on four important factors: (1) nature and extent of pathologic change; (2) correct apparatus and electrodes; (3) proper application based on anatomic principles; (4) persistent treatment over a long period of time.

Archives of Pathology and Laboratory Medicine, Chicago

1: 499-680 (April) 1926

*Bilateral Carotid Arteritis. F. Harbitz, Oslo, Norway.—p. 499.
*Granuloma Venereum (Inguinale). M. Goldzieher and S. M. Peck, New York.—p. 511.
*Congenital Sarcoma of Tibia. A. Kolodny, Iowa City.—p. 524.
*Familial Juvenile Cirrhosis of Liver. F. D. Gunn, Buffalo.—p. 537.
*Simultaneous Occurrence of Carcinoma and Tuberculosis of Uterus. E. S. Gais, Chicago.—p. 542.
*Folliculoma Ovarii: Case. P. J. Manheims, New York.—p. 557.
Aneurysm of Ascending Aorta Communicating with Pulmonary Artery: Case. F. D. Gunn, Buffalo.—p. 562.
Carcinoma of Thymus and Occlusion of Superior Vena Cava. D. Brannan, Pittsburgh.—p. 569.
Manganese in Urine: Its Detection. R. F. McCrackan and E. Passamaneck, Richmond, Va.—p. 585.
Blood Pipet Carrier. G. L. Rohdenburg, New York.—p. 589.
Local or Tissue Immunity. F. P. Gay, New York.—p. 590.

Bilateral Carotid Arteritis.—A case of bilateral carotid arteritis with thrombosis is described by Harbitz, and the question is raised whether it concerns a distinct form of arterial disease.

Granuloma Venereum.—Seven cases of granuloma inguinale have been studied by Goldzieher and Peck. An organism that is biologically and morphologically identical has been observed in all cases. Pure cultures were obtained in five cases. The etiologic agent of venereal granuloma is termed *Bacillus venereogranulomatis*—a proper genus of the family *Bacteriacae*. The etiologic rôle of the organism described is supported by the results of complement fixation, allergic tests and animal experiments.

Congenital Sarcoma of Tibia.—Kolodny reports a case of congenital sarcoma of the tibia occurring in a girl, aged 8 weeks. A high thigh amputation was made. The patient is now 8 years old, well and without evidence of a recurrence or metastases.

Familial Juvenile Cirrhosis of Liver.—A case of cirrhosis of the liver occurring in a girl, aged 4 years, who, during her illness, because of a marked enlargement of the spleen, presented a picture of some form of splenic anemia, is reported by Gunn. The girl died. Necropsy revealed atrophic cirrhosis of the liver, cirrhosis of the pancreas and histologic changes in the spleen of the nature of a diffuse fibrosis and fibro-adenitis of the follicles, as described by Banti for Banti's disease. Besides this, a high-grade myeloid metaplasia was found in the spleen and lymph nodes, which is assumed to be of secondary nature. A brother of this child had exhibited the same clinical picture, and had died at about the same age, three years previously.

Associated Carcinoma and Tuberculosis of Uterus.—In a case of associated tuberculosis and carcinoma of the body of the uterus reported by Gais, the latter process was apparently the older one, the tuberculosis developing later as the result of the localization of bacilli from an older distant focus. From the literature, twenty-seven cases in which tuberculosis was associated with carcinoma of the uterus and its adnexa are summarized. Of the total twenty-eight cases now on record, four were tubal carcinomas, eight were carcinomas of the body of the uterus, and sixteen were carcinomas of the cervix.

Folliculoma Ovarii.—A solid tumor of the ovary, 18 by 12 cm., was removed by Manheims from a widow, aged 52, a tripara. Histologic examination showed a large number of roset-like alveoli held together by a stroma composed of spindle cells with relatively long fibrils. In about 30 per cent of the lumina of the rosets, polyhedral shaped isolated cells were found, with clear cytoplasm and deeply staining masses of chromatin, apparently nuclei. Usually these cells were free in the lumina. The tumor belongs to that type described by Gottschalk, and called by him "folliculoma malignum ovarii."

Arkansas Medical Society Journal, Little Rock

22: 231-254 (April) 1926

History of Arkansas Industrial University Medical Department. J. H. Lenow, Little Rock.—p. 231.
Conditions Affecting Practice of Medicine. F. B. Young, Gering, Neb.—p. 233.

Boston Medical and Surgical Journal

194: 661-708 (April 15) 1926

*Aspiration of Joints. R. C. Lonergan, Boston.—p. 661.
Case of Sarcomatosis of Skin. J. K. Narat, Chicago.—p. 664.
Hospital Administration from Viewpoint of Clinician. H. A. Christian, Boston.—p. 668.
Dietitian and Her Job. E. M. Thallman, Boston.—p. 673.

194: 709-758 (April 22) 1926

Skin Diseases in Industrial Clinic. D. C. Parmenter and S. Dubreuilh, Boston.—p. 709.
Addison's Disease: Cases. W. H. Swan and L. W. Bortree, Colorado Springs.—p. 712.
Cod Liver Oil as Source of Fat Soluble Vitamins. A. D. Holmes, Stoneham.—p. 714.
Progress of Gastro-Enterology in 1925. A. E. Austin, Boston.—p. 732.
Treatment of Wounds with Dichloramin-T. D. S. Adams, Worcester.—p. 737.

Aspiration of Joints.—The value of aspiration of joints as a therapeutic procedure in septic joints of low virulency is discussed by Lonergan. He says that it will often control the process. The procedure may be repeated, if necessary. Simple measures, such as Bier's hyperemia, poulticing and the use of hot compresses, seem to aid in the convalescence. Such patients may often be saved by arthrotomy, and the possible risk of an open operation avoided if they are aspirated and then carefully watched.

Illinois Medical Journal, Oak Park

49: 265-352 (April) 1926

Teamwork for Health of People. W. D. Haggard, Nashville, Tenn. —p. 297.
Health as Business Asset. R. L. Wilbur, San Francisco.—p. 300.
Surgery of Gallbladder. W. J. Mayo, Rochester, Minn.—p. 303.
Institutionalized Epileptics. T. G. Hall, Dixon, and C. F. Read, Chicago. —p. 305.
Choice of Intestinal Anastomosis from Anatomic and Technical Standpoint, Excluding Rectum. W. J. Sullivan, Chicago.—p. 310.
Diagnosis and Treatment of Infections of Female Pelvic Organs. H. Schmitz, Chicago.—p. 314.
Community Goiter Prevention and Education. W. J. Potts, Oak Park. —p. 316.
Parallelism: Apparent Similarity and Close Resemblance Between Tuberculosis and Leprosy. O. E. Denney, Carville, La., and J. Ritter, Chicago.—p. 318.
Thrombo-Angiitis Obliterans. J. D. Claridge, Chicago.—p. 328.
Credit Rating and Collection Bureau of Vermilion County Medical Society. E. G. C. Williams, Danville.—p. 332.
County Health Unit. T. Parran, Jr., Springfield.—p. 334.
Venereal Diseases of Anus and Rectum. C. J. Drueck, Chicago.—p. 339.
Luminal Poisoning with Conjunctival Residue. E. S. Hamilton, C. W. Geiger and J. H. Roth, Kankakee.—p. 344.
As Others (Seem to) See Us. H. N. Jennett, Kansas City, Mo.—p. 346.
Ephedrine. G. F. Fiske, Chicago.—p. 348.

Indiana State Medical Association Journal, Ft. Wayne

19: 135-184 (April) 1926

*Acute Alimentary Disturbances in Infants. A. G. Mitchell, Cincinnati. —p. 135.
Repair of Perineum. W. H. Williams, Lebanon.—p. 145.
Insulin Treatment of Diabetes. G. W. McCaskey, Fort Wayne.—p. 149.
Sponge Control in Operating Room. F. H. Jett, Terre Haute.—p. 152.
*Intra-Abdominal Hernia: Case. L. W. Elston, Fort Wayne.—p. 157.
What We Know About Ventilation. A. C. Willard, Urbana, Ill.—p. 159.

Acute Alimentary Disturbances in Children.—A clinical study made by Mitchell of thirty-five children and an analysis of the results of others have convinced him that in infants who had clinical evidence of dehydration the determination of the blood urea nitrogen, uric acid and the carbon dioxide of the blood plasma showed different values, depending on whether or not the infants were suffering from toxic symptoms and hyperpnea. If no toxic symptoms were observed, the blood nonprotein nitrogen constituents were practically normal. If moderate toxic symptoms were present, there usually was a moderate increase of nonprotein constituents, but if the patient showed distinct evidence of toxic symptoms, the blood urea nitrogen and uric acid usually were decidedly increased over normal, although the increase was neither consistent enough nor great enough to indicate that uremia was a primary cause of the fatal termination. A decrease in the carbon dioxide capacity of the blood plasma was found when the dehydrated infants showed clinical evidence of hyperpnea. In other infants in whom hyperpnea was not noticeable, but who were moderately toxic and whose blood usually contained an increase in nonprotein nitrogen constituents, the plasma showed a diminished carbon dioxide capacity in some instances. Usually, however, the carbon dioxide capacity of the plasma was normal when there was no increase in the respiratory rate and depth. The alkali reserve was usually greatly diminished before death. However, since in several infants this did not occur and in several, with equally low alkali reserve, recovery followed, it would seem that the acidosis is an accompanying phenomenon and not a primary cause of either the condition or its fatal termination.

Intra-Abdominal Hernia.—Sudden generalized abdominal pain accompanied by nausea and vomiting, followed by a similar attack four months later was the history of Elston's patient, a girl, aged 16. Abdominal tenderness, with slight rigidity and tympanites, were objective symptoms. At operation there was found a small, evidently congenital, aperture, in the root of the mesentery, hard and ringlike, about as large as a lead pencil. The bowel which had herniated through this aperture was about 76 inches (193 cm.) in length and was gangrenous. The herniated bowel began about 4 inches above the cecal junction and extended toward the jejunum. It was resected and an end to end anastomosis was done by the use of a button which was recovered on the ninth day, and the patient left the hospital in apparent good health.

Iowa State Medical Society Journal, Des Moines

16: 153-204 (April) 1926

Diagnostic Net: Surgical Viewpoint. P. A. White, Davenport.—p. 159.
Morbid Attitudes and Beliefs. C. M. Campbell, Boston.—p. 164.
Pancreatic Disease: Cases. A. A. Johnson, Council Bluffs.—p. 169.
Early Recognition of Arsenic Poisoning Due to Neo-Arsphenamine: Treatment. R. S. Grossman, Marshalltown.—p. 175.
Traumatism of Head and Brain in Civil Practice. G. M. Hackler, Dallas, Texas—p. 177.
*Blood Transfusion. L. D. Powell, Rochester, Minn.—p. 180.
Postoperative Massive Collapse of Lung: Case. J. C. Shellito, Independence.—p. 186.
Tularemia in Iowa. W. R. Whiteis and E. J. Anthony, Iowa City.—p. 188.
Vomiting of Pregnancy. E. A. Conrad, Decorah.—p. 189.

Blood Transfusion.—Investigation of twenty-five donors who had made more than twenty-five donations each, Powell states, has shown weakness and secondary anemia in only four cases. Five of the donors had given more than fifty, and one had given sixty-three, transfusions. One of the twenty-five who returned recently to be reexamined with regard to the advisability of giving more donations was found to have active pulmonary tuberculosis. One was weak; two had moderate secondary anemia, and the remainder had normal blood and their general health was excellent. This shows that the same donors may be used repeatedly without ill effects to themselves. Because of its simplicity, safety and satisfactory results, the indirect method with sodium citrate is preferred by Powell.

Journal of Bacteriology, Baltimore

11: 229-303 (April) 1926

Microbic Heredity. VI. Infective and Taxonomic Significance of Newly Described Ascospore Stage for Fungi of Blastomycosis. R. R. Mellon, Rochester, N. Y.—p. 229.
Bacterial Spores. I. Thermal Resistance as Affected by Age and Environment. C. A. Magoon, Washington, D. C.—p. 253.
"Pin Point Colony" Organisms in Baltimore Milk Supply. J. C. Swenarton, Baltimore.—p. 285.
Oxalic Acid Test for Indol. S. A. Koser and R. H. Galt, Urbana, Ill. —p. 293.

Journal of Clinical Investigation, Baltimore

2: 299-407 (April) 1926

Effect of Standard Exercise on Oxygen Consumption of Normal, Overweight and Chronically Ill Individuals. B. D. Bowen and M. E. Carmer, Buffalo.—p. 299.
*Effect of Phenylhydrazine Derivatives in Treatment of Polycythemia. P. H. Long, Boston.—p. 315.
*Experimental Anemia Produced by Phenylhydrazine Derivatives. P. H. Long, Boston.—p. 329.
Apparatus for Cinematographic Observation of Human Capillaries. J. H. Crawford and H. Rosenberger, New York.—p. 343.
Capillary Circulation in Normal Subjects. J. H. Crawford, New York. —p. 351.
Human Capillaries in Cases of Auricular Fibrillation. J. H. Crawford, New York.—p. 365.
*Jaundice Following Pulmonary Infarction in Patients with Myocardial Insufficiency. I and II. C. S. Keefer and W. H. Resnik, Baltimore. —pp. 375 and 389.

Phenylhydrazine Derivatives in Polycythemia.—The therapeutic effect of phenylhydrazine hydrochloride and acetyl phenylhydrazine was studied by Long in three cases of polycythemia vera, and one case of secondary polycythemia or hypertension. The best results with phenylhydrazine were achieved in the treatment of polycythemia vera. In this condition, with no discomfort to the patient, the blood can be reduced to normal and held there with ease for a considerable period of time. With a normal blood picture, these patients lose the symptoms of their polycythemia and are greatly benefited. In no case could Long detect any signs of liver injury arising from phenylhydrazine.

Experimental Anemia Produced by Phenylhydrazine Derivatives.—An anemia, pursuing a similar course in all the experiments, was produced by Long by the intraperitoneal injection of phenylhydrazine derivatives in rabbits. When the anemia was established, it was possible to demonstrate the presence of methemoglobin in the blood serum. There was a marked increase in the percentage and total number of reticulated red blood cells in the peripheral blood during the period of the anemia, and the hematopoietic system underwent a marked hyperplasia, which progressed until red blood cell production overbalanced red blood cell destruction.

A marked increase in the number of phagocytic cells containing intact red blood cells and pigment was found in the spleen, bone marrow and lymph nodes during the anemia. It was not possible to demonstrate the presence of bilirubin in the blood plasma of the rabbits during the anemic stage. Urobilinogen appeared in the urine on the first day after the injection of phenylhydrazine and remained in demonstrable amounts for about three weeks.

Jaundice in Myocardial Insufficiency.—Keefer and Resnik reported ten cases of myocardial insufficiency in which the sudden appearance of visible jaundice, or the sudden increase in jaundice that was already present seemed directly dependent on the development of pulmonary infarction. The jaundice was due, in all instances, to bilirubinemia. In all these cases, the clinical course was very similar, for death, due to progressive myocardial failure, occurred within a relatively short time.

Journal of Comparative Neurology, Philadelphia

40: 253-408 (April 15) 1926

Development of Motility and Behavior Reactions in Toadfish (Opsanus Tau). H. C. Tracy, Lawrence, Kan.—p. 253.
Innervation and Nerve Terminations of Reptilian Lung. A. C. Jones, Portland, Ore.—p. 371.
Rôle of Cells of Medullary Origin in Development of Sympathetic Trunks. A. Kuntz, St. Louis.—p. 389.

Journal of Experimental Medicine, Baltimore

43: 443-590 (April) 1926

*Effect of Antiserum Against Soluble Toxic Substance of Bacillus Coli in B. Coli Peritonitis. B. Steinberg and E. E. Ecker, Cleveland.—p. 443.
Reaction of Cow's Milk to Blood Serum Precipitin. F. S. Jones, Princeton, N. J.—p. 451.
Transformation of Monocytes into Fibroblasts Through Action of Rous Virus. A. Carrel and A. H. Ebelling, New York.—p. 461.
*Anaphylactic Shock Caused by Antibody in Animals Sensitized by Antigen—Reversed Passive Anaphylaxis. E. L. Opie and J. Furth, Philadelphia.—p. 469.
*Effect of Jejunostomy in Experimental Obstruction of Jejunum of Dog. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 483.
Calcification of Suprarenal Glands of Cats. D. Marine, New York.—p. 495.
*Syphilitic Myocarditis in Rabbit. W. H. Brown and L. Pearce, New York.—p. 501.
Cultivation of Rickettsia-Like Micro-Organisms from Rocky Mountain Spotted Fever Tick, Dermacentor Andersoni. H. Noguchi, New York.—p. 515.
*Experimental Bone Marrow Reactions. I. Anemia Produced by Collargol. G. L. Muller, Boston.—p. 533.
Epidemiologic Studies on Respiratory Infections of Rabbit. VII. Pneumonias Associated with Bacterium Lepisepticum. L. T. Webster, New York.—p. 555.
Id. VIII. Carriers of Bacterium Lepisepticum. L. T. Webster, New York.—p. 573.

Bacillus Coli Antiserum.—From young cultures of *B. coli* (from eighteen to twenty-four hour cultures), a soluble toxic substance was obtained by Steinberg and Ecker and an antiserum against this toxic substance was produced. The soluble toxic substance is the principal lethal factor when cultures of *B. coli* are injected into the peritoneal cavity of rabbits. Intravenous administration of the antiserum can avert death in rabbits previously injected intraperitoneally with lethal doses of *B. coli*.

Reversed Passive Anaphylaxis.—Opie and Furth found that anaphylactic shock occurs (in rabbits) when the usual procedure for the production of passive anaphylaxis is reversed; that is, when an animal previously treated with antigen receives the corresponding antiserum by way of the circulating blood.

Effect of Jejunostomy in Experimental Obstruction.—Haden and Orr summarize their findings as follows: Jejunostomy does not prevent the development of the chemical changes of the blood characteristic of obstruction of the jejunum in the dog. Jejunostomy following experimental obstruction of the jejunum has no beneficial effect on the duration of life. There is some evidence that life may be shortened by early jejunostomy. Treatment of jejunal obstruction with physiologic sodium chloride solution tends to prolong the life of animals, regardless of jejunostomy.

Syphilitic Myocarditis in Rabbit.—In the course of routine postmortem examinations of rabbits infected with *Spirochaeta pallida*, six cases of pronounced granulomatous myocarditis were encountered by Brown and Pearce. Spirochetes were not demonstrated in the lesions, but the clinical history and the gross and microscopic appearance of the lesions seemed to warrant a diagnosis of syphilitic myocarditis. The lesions measured 1 cm. or more in diameter and histologically were practically identical with those described by Warthin in cases of syphilitic myocarditis in man. These are said to be the first cases of syphilitic myocarditis or of visceral syphilis in the rabbit that have been reported.

Experimental Bone Marrow Reactions.—Muller describes the effect produced by the intravenous administration of collargol on the bone marrow of rabbits. Three fairly well defined stages could be recognized: (*a*) an initial stage after comparatively few and small doses, with erythrocytic and endothelial hyperplasia in the bone marrow and with evidences of this stimulation in the peripheral blood in the form of young erythrocytes and normoblasts; (*b*) an intermediary stage which followed the injection of larger amounts of collargol, and which was characterized by a predominant myeloid hyperplasia; (*c*) a final stage with marked bone marrow aplasia and with colloidal silver deposited in endothelial cells as well as in clasmatocytes. This was associated with a high grade anemia with low color index, resembling aplastic anemia in its main features. This stage terminated fatally. It is suggested that the results may be offered in support of the theory of the endothelial origin of both clasmatocytes and red blood cells.

Journal of General Physiology, Baltimore

8: 303-461 (April 20) 1926

Photolysis of Luminescent Granules of Eucharis Multicornis. A. R. Moore, Naples.—p. 303.
*Nature of Diphtheria Toxin. K. G. Dernby, Stockholm, Sweden.—p. 311.
Swelling and Osmotic Pressure of Gelatin in Salt Solutions. J. H. Northrop and M. Kunitz, New York.—p. 317.
Activation of Starfish Eggs by Acids. R. S. Lillie, Chicago.—p. 339.
Micrurgical Studies in Cell Physiology: Action of Chlorides of Sodium, Potassium, Calcium and Magnesium on Protoplasm of Ameba Proteus. R. Chambers and P. Reznikoff, New York.—p. 369.

Nature of Diphtheria Toxin.—The formation of diphtheria toxin is explained by Dernby as follows: The toxin is to its greatest part neither secreted from the living cells, nor is it extracted from the dead bacilli. The bacilli grow, die, and autolyze. Simultaneously, proteolytic enzymes of a specific character are liberated. These enzymes attack the albumoses and peptones of the autolyzed bacilli as well as of the broth, and some of the primary split products are the toxic substances. If the proteolysis proceeds further, the toxin will be disintegrated also.

Journal of Industrial Hygiene, Baltimore

8: 143-210 (April) 1926

Occupational Diseases Reported to Ohio State Department of Health for Five-Year Period Ending June 30, 1925. E. R. Hayhurst, Columbus, Ohio, and D. J. Kindel, Cincinnati.—p. 143.
Estimation of Zinc in Biologic Material. L. T. Fairhall, Boston.—p. 165.
Normal Occurrence of Zinc in Biologic Materials: Review of Literature; Normal Distribution of Zinc in Rat, Cat and Man. R. E. Lutz, Boston.—p. 177.

Journal of Nervous and Mental Diseases, New York

63: 313-432 (April) 1926

Character of Modern Psychiatry: Synthetic Presentation of Work of Paul Schilder. S. Parker, New York.—p. 313.
Diffuse Glioma (Gliosis): Two Cases. F. P. Moersch, Rochester, Minn.—p. 343.
Facial Diplegia in Neo-Arsphenamine Polyneuritis. G. B. Hassin and C. F. Read, Chicago.—p. 352.
Postencephalitic Respiratory Disorders. S. E. Jelliffe, New York.—p. 357.

Journal of Parasitology, Urbana, Ill.

12: 117-181 (March) 1926

Morphologic Studies on Trichomonas. M. Tanabe, Baltimore.—p. 120.
Morphology and Cultivation of Embadomonas Cuniculi N. Sp. J. Collier and W. C. Boeck, Boston.—p. 131.
Tylenchus Balsamophilus, New Plant Parasitic Nematode. G. Thorne, Salt Lake City.—p. 141.
Endolimax Caviae N. Sp. from Guinea-Pig and Endolimax Janisae N. Sp. from Domestic Fowl. R. W. Hegner, Baltimore.—p. 146.
Cultivation of Trichomonas, Thermal Death Point, Anaerobic Conditions, Attempts at Sterilization. J. M. Andrews, Baltimore.—p. 149.

Journal of Urology, Baltimore

15: 341-407 (April) 1926

*Results with Intravenous Chemotherapy in Urinary Infections. W. F. Braasch and H. C. Bumpus, Jr., Rochester, Minn.—p. 341.
*Therapeutic Value of Mercurochrome, Hexamethylenamine, and Hexylresorcinol in Experimental Urinary Infection in Rabbits. H. F. Helmholz and R. S. Field, Rochester, Minn.—p. 351.
Changes of Urine Reaction Vital Factor in Treatment of Primary Acute Bacterial Cystitis. N. Blaustein, New York.—p. 363.
*Ammonium Chloride as Urinary Acidifier. M. Muschat, Philadelphia.—p. 375.
Foreign Bodies (Hairpin; Nail) in Bladder. W. T. Briggs, Lexington, Ky.—p. 383.
Spermatocele. M. Dorne, Chicago.—p. 389.
*Reduplication of Ureter and Pelvis. J. K. Ormond, Detroit.—p. 397.
*Intra-Urethral Chancroids. W. D. Goodman, Washington, D. C.—p. 403.
*Massive Bilateral Hydrocele. S. R. Woodruff, New York.—p. 407.

Intravenous Chemotherapy in Urinary Infections.—Of the various mediums employed by Braasch and Bumpus with intravenous chemotherapy, mercurochrome-220 soluble has been effective in acute and subacute infections of the urinary tract and in occasional cases of acute general sepsis of various types. In chronic infections involving the urinary tract and other tissues, it is not of great therapeutic value. The greatest objection to its intravenous use is its toxicity. Severe reactions are common, marked by prostration, chills and dysentery. Two of the 196 patients who received intravenous injections of mercurochrome at the Mayo Clinic during the last year died. Necropsy in one case demonstrated that in the absence of any other cause of death toxemia was the probable lethal factor. It is evident, therefore, that mercurochrome should be used intravenously only if emergency demands it. Although the element of danger is ever present, nevertheless, in cases of acute sepsis, when other measures have failed, it merits trial.

Therapeutic Value of Mercurochrome, Methenamine and Hexylresorcinol.—Helmholz and Field summarize their results as follows: In the dosages used, methenamine is superior to mercurochrome and hexylresorcinol as a urinary antiseptic in cases of infection produced by *Staphylococcus albus* and the colon bacillus. *Staphylococcus albus* seems to be very much more vulnerable to the action of methenamine than is the colon bacillus.

Ammonium Chloride as Urine Acidifier.—Studies made by Muschat show the value of ammonium chloride as an acidifier of the urine. Ammonium chloride in a dosage of 1 Gm. (15 grains), three times daily, causes a decided increase in the normal urinary acidity. Ammonium chloride in the same dosage may be used to change the reaction in cases of alkaline cystitis.

Reduplication of Ureter and Pelvis.—In the case cited by Ormond there was a double pelvis and two ureters, which united in the bladder wall and emptied into the bladder by one orifice.

Intra-Urethral Chancroids.—In Goodman's case, endoscopic examination revealed six small, discrete, tender ulcers, 6 cm. from the meatus. These ulcers were sharply defined, with a depressed necrotic center, duplicating each other on the contiguous sides of the urethral wall, each measuring about 2 mm. in diameter. These lesions had somewhat the appearance of herpes simplex on the oral mucosa. The remainder of the urethra appeared normal. Cultures were positive for Ducrey's bacillus. Dark field examinations of the urethral lesions were negative for *Spirochaeta pallida*. Goodman has found only two cases of intra-urethral chancroid reported during the last forty years.

Bilateral Hydrocele.—In Woodruff's case, the right sac contained 2,220 cc. of fluid, and the left sac, 1,800 cc. A plastic operation was done on the skin of the scrotum for shortening.

Kansas Medical Society Journal, Topeka

26: 105-136 (April) 1926

Artificial Pneumothorax. R. G. Breuer, Norton.—p. 105.
Some Successes and Failures in Obstetrics. R. A. West, Wichita.—p. 107.
Traumatic Glycosuria: Relation to Diabetes Mellitus. W. C. Menninger, Topeka.—p. 109.
Physiotherapy in Treatment of Prostatic Disturbances. W. C. Chaney, Independence.—p. 113.

Kentucky Medical Journal, Bowling Green

24: 161-200 (April) 1926

Chemical Significance of Wassermann Reaction. J. D. Allen, Louisville.—p. 163.
Diagnostic Significance of Abnormal Heart Sounds. E. F. Horine, Louisville.—p. 166.
Pulmonary Tuberculosis: Diagnosis. E. M. Trabue, Louisville.—p. 171.
Id. Roentgen-Ray Findings. I. T. Fugate, Louisville.—p. 176.
Id. Climatology. A. M. Barnett, Louisville.—p. 177.
Id. Surgery of Suppuration. W. I. Hume, Louisville.—p. 178.
Id. Exercise in Treatment. C. M. Garth, Louisville.—p. 179.
Rural Medicine: Health Officer. E. P. Whistler, Louisville.—p. 184.
Rural Therapy. D. A. Bates, Louisville.—p. 184.
Diphtheria. J. H. Pritchett, Louisville.—p. 187.
Traumatic Rupture of Urocyst: Case. J. H. Peak, Louisville.—p. 190.
The Spine. J. W. Bayless, Louisville.—p. 193.

Laryngoscope, St. Louis

36: 157-234 (March) 1926

History of Bronchoscopy and Esophagoscopy for Foreign Body. E. J. Patterson, Pittsburgh.—p. 157.
Upper Lobe Bronchoscope. M. C. Myerson, New York.—p. 179.
Exostoses of Cervical Vertebrae as Cause for Difficulty in Swallowing. H. P. Mosher, Boston.—p. 181.
Traumatic Perforation of Esophagus. H. B. Orton, Newark, N. J.—p. 183.
Anterior Dislocation of Atlas as Cause for Inability to Swallow Solid Foods. H. B. Orton, Newark, N. J.—p. 188.
Roentgenogram of Interesting Esophageal Distortion. H. Hall, New York.—p. 190.
Emphysema of Neck and Chest (Preoperative) Following Inhalations of Piece of Nut. H. H. Forbes, New York.—p. 192.
Obscure Chest Conditions with Positive Bronchoscopic Findings Including Two Cases of Syphilis of Trachea and Bronchi. M. C. Myerson, New York.—p. 193.
Phantom Foreign Body (Spasm) of Larynx. M. C. Myerson, New York.—p. 197.
Foreign Body Introduced Transpleurally and Removed via Bronchus Three Years Later. C. J. Imperatori, New York.—p. 200.
Foreign Body Removed from Bronchus After Being in Situ Over Three Years. C. J. Imperatori, New York.—p. 202.
Bronchoscope as Invaluable Aid for Performance of Tracheotomy in Certain Class of Cases. F. O. Lewis, Philadelphia.—p. 204.
Foreign Bodies in Tracheobronchial Tree: Report of Cases in Which Bronchoscopy Was Not Done. L. H. Clerf, Philadelphia.—p. 206.
Surgical Diathermy for Tumors of Trachea. H. H. Bowling and P. P. Vinson, Rochester, Minn.—p. 217.

Medical Journal and Record, New York

123: 485-562 (April 21) 1926

Problem Method of Medical Teaching. A. D. Bush, Atlanta.—p. 485.
More Fallacies Concerning Hemorrhoids. J. F. Montague, New York.—p. 487.
Cancer. Willy Meyer, New York.—p. 488.
Palliative Treatment of Inoperable Cancer. J. K. Narat, Chicago.—p. 491.
Multiple Osteochondromatosis. J. Epstein, New York.—p. 494.
Case of Pyelonephritis with Persistent Hematuria. L. Vaccaro, Philadelphia.—p. 496.
Case of Suppurating Fibro-Adenoma of Breast. M. W. Bulman, Norwich, England.—p. 498.
Plastic Surgery of Nose. A. G. Bettman, Portland, Ore.—p. 499.
Macrosomia or Congenital Hypertrophy. E. D. Fenner, New Orleans.—p. 501.
Efficacy of Ether in Treatment of Suppurative Otitis Media. G. B. McAuliffe, New York.—p. 503.
Action of Arsphenamine. J. Schumacher, Berlin.—p. 506.
Mercury in Treatment of Syphilis. L. Spiegel, New York.—p. 510.

Nebraska State Medical Journal, Norfolk

11: 128-168 (April) 1926

Classification of Glycosurias. F. Conlin, Omaha.—p. 129.
Family Physician as Supervisor of Child Health. H. E. Harvey, Fairbury.—p. 138.
Rheumatic Fever. L. W. Frank, Denver.—p. 141.
Hand Infections. J. A. Weinberg, Omaha.—p. 144.
Physician and His Community. H. von W. Schulte, Omaha.—p. 146.
Kidney and Bladder Infections. A. D. Munger, Lincoln.—p. 154.
Therapy of Nephritis. M. C. Howard, Omaha.—p. 157.

Philippine Islands Medical Association Journal, Manila

6: 78-112 (March) 1926

Index Line in Malarial Splenomegaly. R. G. Padua and L. Lopez-Rizal.—p. 78.
*Coleman Diet in Typhoid. A. B. M. Sison and M. Ignacio.—p. 84.

Coleman High Calory Diet in Typhoid.—Sison and Ignacio report on the results accruing from the use of a high calory diet in typhoid. The condition of the mouth was practically not affected by the high calory diet. Nausea and vomiting and diarrhea occurred less frequently. Tympanites was slightly more frequent. Nervous symptoms were present in 9 per cent of the high calory diet cases, but in 31 per cent

of the low calory diet cases the duration of the febrile period and the incidence of recrudescence were not affected by the high calory diet. The range of temperature was slightly lower in the high calory cases than in the low calory cases. Relapses were less frequent, and the duration of convalescence was shortened. Complications developed in only 11 per cent of the high calory cases. Mortality in the high calory cases was 2 per cent and in the low calory cases, 18 per cent.

Physical Therapy, X-Ray, Radium, Omaha

7: 189-250 (April) 1926

Radiation Therapy in Carcinoma of Uterine Cervix. R. E. Fricke, Baltimore.—p. 189.
Treatment of Anterior Poliomyelitis. F. H. Ewerhardt, St. Louis.—p. 196.
Diathermy in Angina Pectoris. A. E. Joslyn, Lynn, Mass.—p. 201.
*Roentgenographic Study of Sella Turcica in Abnormal Children. M. B. Gordon and A. L. L. Bell, New York.—p. 211.
Roentgen-Ray Treatment of Aortic Aneurysms. S. A. Levey, St. Louis.—p. 219.

Sella Turcica in Abnormal Children.—Studies were made by Gordon and Bell of the contours of the sella turcica in sixty-four abnormal children. The findings were compared with those of 104 normal children. It was found that the shape of the sella does not differ significantly in normal and abnormal children. The type of disorder is not correlated with the shape of the sella. There is no formation characteristic of any individual disease. The excavation that has been described in mongolian idiots is extrasellar. It may be uncovered or covered by the lesser wings of the sphenoid. It is a normal foundation found with the same frequency in all children and is not characteristic of any known disorder. The size of the sella is not influenced by any of the diseases studied. As in the normal series, there was found no relationship between the size or shape of the sella and the size of the head.

South Carolina Medical Association Journal, Greenville

22: 79-98 (April) 1926

*Unusual Obstetric Experience. J. J. Lindsay, Spartanburg.—p. 84.

Premature Birth with Intact Amniotic Sac.—Lindsay reports a case of premature birth at the sixth month in which the child was expelled with the amniotic sac intact. It had peeled off the placenta completely—so smoothly and entirely that not a bit of fluid had escaped. The only thing showing its attachment was the torn placental end of the umbilical cord. The membrane peeling off the placenta left every blood vessel wide open and the woman bled to death in a few moments.

Southwestern Medicine, Phoenix, Ariz.

10: 151-204 (April) 1926

Magnetic Foreign Bodies in Eye: 136 Cases. A. Martin, Phoenix.—p. 151.
Prostatic Obstruction. K. D. Lynch, El Paso, Texas.—p. 161.
Allergy and Immunity in Tuberculous Infection. J. W. Flinn, Prescott.—p. 166.
Electrocardiogram. C. R. Haig, El Paso, Texas.—p. 170.
Treatment of Hemorrhage in Obstetrics and New-Born. H. H. Varner, El Paso, Texas.—p. 173.
Cause and Control of Pulmonary Hemorrhage. R. B. Homan, El Paso, Texas.—p. 175.
Diagnosis of Syphilis. H. M. Purcell, Phoenix.—p. 177.
Desert Sanatorium of Southern Arizona, Inc. B. L. Wyatt, Tucson.—p. 183.

Surgery, Gynecology and Obstetrics, Chicago

42: 449-578 (April) 1926

*Congenital Dislocation of Hip. V. Putti, Bologna, Italy.—p. 449.
Secondary Operations on Common Bile Duct. W. Walters, Rochester, Minn.—p. 453.
*Use of Radium and Roentgen Rays in Treatment of Malignant Diseases of Paranasal Sinuses. D. Quick, New York.—p. 462.
*Value of Peritoneal Sheets of Coalescence in Abdominal Surgery. A. Gutierrez, Buenos Aires.—p. 469.
Influence of Protein Therapy on Experimental Staphylococcus Infection of Cornea of Rabbit. B. W. Key, New York.—p. 473.
*Pelvic Hernia: Posterior Vaginal Hernia. L. M. Miles, Peking.—p. 482.
*Three Cases of Thyroid Metastasis to Bones. W. M. Simpson, Ann Arbor, Mich.—p. 489.
*Transplantation of Parathyroids in Partial Thyroidectomy. F. H. Lahey, Boston.—p. 508.
*Pylephlebitis and Liver Abscess Following Appendicitis. E. L. Elinson, Philadelphia.—p. 510.
*Anterior Abdominal Hysterotomy for Interruption of Pregnancy and Sterilization. P. Oginz, New York.—p. 523.
*End-Results in Interposition Operation for Cure of Prolapsus Uteri and Cystocele. F. W. Johnson, Boston.—p. 527.
Clinical Application of Recent Studies on Jaundice. A. M. Snell, Rochester, Minn.—p. 528.
Appendicitis in Infancy and Childhood. S. J. Seeger, Milwaukee.—p. 536.
Acquired Suppurative Diverticulitis with Pylephlebitis and Metastatic Suppuration in Liver. S. E. Kramer, Perth Amboy, N. J., and W. Robinson, Spokane, Wash.—p. 540.
Glycosuria and Pregnancy. H. J. John, Cleveland.—p. 543.
Internal Drainage of Common Bile Duct. J. Gatellier, Paris.—p. 547.
*Technic of Transperitoneal Cesarean Section. J. O. Polak, New York.—p. 551.
*Rational Management of Skin Grafts. F. Smith, Grand Rapids, Mich.—p. 556.
Improved Syringe and Needle for Use in Regional Anesthesia. J. S. Lundy, Rochester, Minn.—p. 563.
Pruritus Ani: Treatment by Alcohol Injection. H. B. Stone, Baltimore.—p. 565.
*Treatment of Acute Postoperative Toxemia of Hyperthyroidism. J. Rogers, New York.—p. 567.
Eclampsia: Etiology and Treatment. H. F. Kane, Washington, D. C.—p. 569.

Congenital Dislocation of Hip.—Putti outlines his method of treating dislocation of the hip and reviews the results obtained by surgical and nonsurgical treatment in 700 cases. Functional and anatomic success was obtained in 80 per cent for single dislocations, and 60 per cent for bilateral. On the basis of 1,879 cases with 2,556 reductions, success has resulted in 90 per cent of the single dislocations, and 65 per cent of the bilateral cases have been improved.

Radiotherapy in Malignant Disease of Paranasal Sinuses.—Quick urges early surgical exploration of the paranasal sinuses and biopsy so that earlier diagnosis of new growths may be made. With few exceptions, the principles applying to surgical removal of cancer, in general, cannot be carried out in dealing with growths in the paranasal sinuses. Radium and roentgen rays are of value in treating this group of cases, but, except in palliative procedures, must be used in conjunction with surgery. Radium and roentgen ray may be depended on to eradicate the tumor tissue if applied accurately and uniformly throughout the growth in sufficient dosage. Surgery must be employed to provide exposure for radium application and adequate drainage.

Peritoneum and Abdominal Surgery.—Gutierrez says that the peritoneal sheets of coalescence are remarkably serviceable in abdominal surgery. It is through them that certain fixed segments of the digestive tract may be made movable. Intestinal mobilization represents the preliminary and fundamental element in every surgical intervention on an intestinal segment that has become secondarily fixed by the process of coalescence. Gutierrez discusses briefly the formation of each of the more important sheets of coalescence.

Vaginal Hernia.—Miles reviews nine cases of vaginal hernia already on record, and reports two additional cases. The cause of these hernias, with one exception, was trauma, following pregnancy or childbearing. A new classification embracing all hernias occurring through the pelvic floor is offered, following the general usage of terminology and classifying it according to its course thus: Pelvic hernia may be perineal, pudendal, or vaginal; and vaginal pelvic hernia may be (*a*) anterior or (*b*) posterior. Prolapse of the uterus accompanied by a general enlargement of the culdesac and protrusion of abdominal contents into the vaginal vault should be called either elytrocele or vaginal enterocele, and not a hernia. The treatment is operative, and the best operation is a perineal one by which the sac is excised and the perineum is repaired, combined with an abdominal operation for obliterating the culdesac.

Thyroid Metastasis to Bones.—In the first of the three cases reported by Simpson, spontaneous fracture of the femur occurred as a result of the presence of a tumor composed of histologically benign thyroid tissue. A small goiter gave no evidence of malignancy. In the second case, the metastasis was to the astragalus. The microscopic picture was that of typical thyroid tissue, and the patient possessed a small, symmetrical goiter which was regarded as clinically benign. The third patient presented signs of vertebral neoplasm with compression myelitis, but with no clinical signs which might direct suspicion to the thyroid gland. Laminectomy exposed

a hazel-nut sized tumor in the sixth cervical vertebra, which, on microscopic examination, contained areas of typical thyroid tissue. All these patients later developed unmistakable clinical evidence of malignancy of the thyroid gland, and all died within a year and a half following operation. One case came to necropsy. A review of the literature shows that there is no such entity as the "benign metastasizing goiter"; hence, the use of this confusing term should be abandoned.

Transplantation of Parathyroids in Partial Thyroidectomy.—Since parathyroids will occasionally be removed at operation and identified in the laboratory, Lahey says they should be carefully searched for on the specimen following operation, and, if found, transplanted. The belly of the sternomastoid is the most convenient place into which to transplant them, and care should be taken to see that the cavity into which they are transplanted is dry.

Pylephlebitis and Liver Abscess Following Appendicitis.—Pylephlebitis and liver abscess are not identical. Eliason says they occur as a complication in from 0.1 to 0.4 per cent of the cases of appendicitis. The prognosis is not universally bad, as 54 per cent of the patients recover. Operation through the diaphragm is the treatment of choice.

Hysterotomy.—Oginz believes that the operation of hysterotomy for the interruption of pregnancy and sterilization is of great value in certain cases of pulmonary tuberculosis, cardiac diseases, chronic nephritis and hypertension and in some unusual cases, and could be used to the patient's advantage much more often than has been the practice in this country.

Operation for Prolapsus Uteri.—Johnson reports nearly 90 per cent of cures from his treatment of these cases. He has modified the Watkins operation. The whole anterior surface of the uterus down to the cervix is sewed to the fascia of the anterior vaginal wall. Thus the uterus is firmly fixed in anteversion to the fascia, and the bladder rests on the posterior aspect of the body of the uterus.

Transperitoneal Cesarean Section.—The points emphasized by Polak in his technic are: first, the low abdominal incision; second, placing of the traction suture in the uterus at the upper limit of the abdominal incision which, when held taut, makes a perfect occlusion of the wound; third, separation of the peritoneal flap, including the bladder; fourth, delivery of the fetus by the head; fifth, allowing the placenta to separate spontaneously, and sixth, packing of the uterus with washed iodoform gauze to stimulate its contraction and retraction. This gauze is usually found in the vagina at the end of twenty-four hours. The seventh point is complete occlusion of the uterine wound by the suture of the bladder reflexion over it, which prevents the possibility of peritoneal leakage and intestinal adhesions.

Management of Skin Grafts.—Smith believes that the commonly accepted advice to allow for contraction and to cut the graft one-third to one-half larger than the area to be covered is one of the commonest sources of failure. He insists that the graft must be cut accurately to size and maintained at normal tension. For the same reason, it must be accurately approximated by carefully placed sutures.

Treatment of Acute Postoperative Toxemia of Hyperthyroidism.—In the treatment of these toxemias, Rogers recommends the subcutaneous administration of a boiled aqueous extract of the thyroid—the so-called thyroid residue. It seems to act by stimulation of the terminal filaments of the vagus or parasympathetic portion of the involuntary nervous system and so does not increase the already alarming rapidity of the heart action.

West Virginia Medical Journal, Charleston

22: 169-224 (April) 1926

Brain Tumors. W. E. Dandy, Baltimore.—p. 169.
Familial Diabetes. W. W. Strange, Huntington.—p. 174.
Fallacies in Diagnosis of Pulmonary Tuberculosis. P. H. Ringer, Asheville, N. C.—p. 175.
Acute Intestinal Obstruction. R. J. Wilkinson and W. C. Kappes, Huntington.—p. 180.
Chief Causes of Uterine Hemorrhage and Their Treatment. E. Novak, Baltimore.—p. 184.
Occiput Posterior Presentations. W. W. Point, Charleston.—p. 188.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

49: 1-156 (March) 1926

Projection of Retina in Primary Optic Neuron in Monkeys. B. Brouwer and W. P. C. Zeeman.—p. 1.
*Hepatolenticular Degeneration. S. Barnes and E. W. Hurst.—p. 36.
Rotated or "Cerebellar" Posture of Head. W. R. Brain.—p. 61.
Retina and Lateral Geniculate Body in Tupaia, Tarsius, Nycticebus and Hapale. H. H. Woolard.—p. 77.
*Prognosis in Disseminated Sclerosis. J. Taylor.—p. 105.
*Function of Right Hemisphere of Brain in Relation to Left in Speech, Music and Calculation. S. E. Henschen.—p. 110.

Hepatolenticular Degeneration.—Corneal pigmentation has been found by Barnes and Hurst in cases described as pseudosclerosis and as Wilson's disease, and in three cases without any observed nervous signs; but in every case in which a postmortem examination of the viscera has been made the presence of cirrhosis of the liver has been demonstrated. It seems clear, therefore, that the corneal pigmentation may be deposited at a stage before the nervous symptoms are so far developed as to give rise to observable clinical signs; further, it apparently never occurs before the liver it diseased.

Prognosis in Disseminated Sclerosis.—Taylor avers that the activity of the poison in disseminated sclerosis is favored by strain or accident. This emphasizes the desirability of complete rest as soon as the condition is recognized, so as to exert a favorable influence on the course of the illness.

Function of Cerebrum.—Henschen reviews facts that he believes to be in favor of the theory of a primary organization of the brain as the original cause of the predominance of the left side of the brain.

British Journal of Ophthalmology, London

10: 177-240 (April) 1926

Epithelial Cyst of Sclera. C. H. Usher.—p. 177.
Frequency of Metastatic Carcinoma of Choroid. C. H. Usher.—p. 180.
Thomson's Capsular Cataract. T. H. Butler.—p. 182.
Case of Retrobulbar Neuritis Following Septic Wound. T. H. Butler.—p. 184.
Excision of Superior Tarsus and Conjunctiva in Treatment of Trachoma. G. F. Heal.—p. 185.
Crossed Quadrant Hemianopsia. C. H. Felix.—p. 191.
Treatment of Lime Burns of Cornea by 10 Per Cent Neutral Ammonium Tartrate. E. Wolff.—p. 196.
Krukenberg's Spindles. J. D. M. Cardell.—p. 198.
Spontaneous Absorption of Mature Senile Cataract. A. J. Ballantyne.—p. 202.
Case of Septic Focus in Retina of Apparently Healthy Boy Aged 15. K. W. Todd.—p. 203.
Diplopia Lamp. E. N. Hughes.—p. 205.

British Journal of Radiology, London

31: 119-162 (April) 1926

Nonopaque Foreign Bodies in Air Passages: Roentgen-Ray Diagnosis and Localization. W. F. Manges.—p. 119.
*Experiences in Irradiation of Breast Cancer. H. Wintz.—p. 150.
Dysostosis Hypophysaria. A. Schüller.—p. 156.

Roentgenotherapy of Breast Cancer.—Wintz stresses the fact that in order to obtain a cure by the roentgen-ray treatment of cancer of the breast it is essential that the requisite dose for the destruction of the carcinoma cells be applied to the axillary and supraclavicular regions as well as to the tumor itself. Of equal importance with exactly dosed treatment is a carefully planned scheme of after-treatment. For not only are toxins set free by the destruction of cancer cells, but the metabolism of normal cells is considerably changed in consequence of the large area involved. It is now the task of the body to get rid of the decayed cells and to replace the disintegrated tumor by healthy tissue. This difficult task can only be accomplished when the conditions of life outside the hospital are favorable. Special care must be taken when irradiating carcinoma of the breast to prevent lung fibrosis.

British Journal of Tuberculosis, London

20: 61-100 (April) 1926

*Roentgenography of Chest in Tuberculosis. J. E. A. Lynham.—p. 61.
Antituberculosis Campaign at Home and Abroad. W. H. Dickinson.—p. 67.
*Pretuberculous Child. A. Massey.—p. 72.
Habitat in Pulmonary Tuberculosis. F. R. Walters.—p. 77.

Use of Roentgen Ray to Estimate Lung Changes in Tuberculosis.—Lynham asserts that when it is established that a patient is suffering from pulmonary tuberculosis, although, as a rule, it is on the general clinical condition that the progress of the case must be judged, roentgenograms taken at intervals provide valuable help in estimating the changes in the lungs.

Pretuberculous Child.—A new definition of the pretuberculous child is suggested by Massey, that is, one who, by reason of tuberculous family history and contact, of past debilitating disease, or of present physical condition, is unusually likely to become the victim of active tuberculous disease; in addition the term is extended to include those children in whom the presence of tuberculosis is already suspected, but whose condition will not admit of precise diagnosis.

China Medical Journal, Shanghai

40: 309-408 (April) 1926

Changes in New U. S. Pharmacopeia. B. E. Read.—p. 309.
Preparations of New U. S. Pharmacopeia. B. E. Read.—p. 314.
Insulin Treatment of Diabetes. R. C. Robertson.—p. 318.
*Ova of Paragonimus Westermanii Encysted in Abdominal Wall. P. D. Choy and A. I. Ludlow.—p. 326.
Military Surgery in South China: Gunshot Wounds. J. O. Thomson.—p. 328.
Heart Disease. F. R. Dieuaide.—p. 344.

Paragonimus Cyst of Abdominal Wall.—Ova of *Paragonimus westermanii* were present in the sputum and in the feces in the case cited by Choy and Ludlow. In July, 1924, following an attack of fever marked by loss of appetite and constipation, the patient suffered severe pain in the epigastrium, accompanied by a swelling in the same region. After catharsis, the pain subsided but the tumor persisted and increased in size slowly until, on admission to the hospital, it was 6 cm. in diameter. The growth was slightly bluish and fairly soft. It was very vascular and adherent to both skin and the muscle fascia. In the vascular connective tissue stroma were found the ova of *Paragonimus westermanii.*

Edinburgh Medical Journal

33: 189-268 (April) 1926

*Oxycephaly. D. M. Greig.—p. 189.
*Postmortem Tuberculous Lesions in Four Hundred and Four Consecutive Examinations. T. R. R. Todd.—p. 219.

Oxycephaly.—Greig illustrates by original cases the clinical features of oxycephaly, describes in detail the skull of an adult oxycephalic patient, and distinguishes true oxycephaly from certain somewhat similar cranial deformities with which it has been confused. Incidentally, he pleads for restriction of the term "oxycephaly" to a specific cranial deformation.

Postmortem Tuberculous Lesions.—Of the total 404 cases in which Todd performed a postmortem examination, 284, or 70 per cent, showed definite signs of tuberculosis. The remaining 120 included forty-six with patches of fibrous tissue or scars in the lungs and pleurae, twelve with only pleural adhesions, and sixty-two with no signs anywhere of tuberculosis. The greatest number of cases of tuberculosis occurred in the age period of from 51 to 60; namely, eighty-one cases, or 32 per cent. There were twenty-two cases of active tuberculosis. In four of these, death was caused by other diseases. In three of the cases the focus was in the lungs, and in the fourth it was in the mesenteric glands. Calcareous lesions were found in 193 cases, caseous lesions in sixty-six cases, and healed lesions in three cases. In the latter, there were no signs of calcification or caseation. The lungs were involved in 171 cases; the lungs only in eighty-one cases. In fifty-two of these eighty-one cases the lesions were calcareous; they were caseous in twenty-four, active in four, and healed in one. Three of the four active cases were fatal. Of the caseous cases, nine were active and fifteen were latent or inactive; that is, completely encapsulated. Glands were involved in 201 cases, the bronchial lymph glands being affected in sixty. Among these adult patients, none died of tuberculosis. The lungs and bronchial glands were simultaneously affected in the same patient fifty-nine times. Two of these were fatal. The combination of lungs, bronchial and mesenteric glands occurred five times, and that of cervical, bronchial and mesenteric glands thrice. The bronchial glands were infected altogether in 144 cases, less fifteen fatal cases. The majority of the lesions in glands were calcareous, and the remainder were caseous, completely or partially encapsulated. The mesenteric lymph glands were affected in sixty-four cases, only twenty-two of these cases being in combination. The mesenteric glands are at the high level of 66 per cent during the first decennium, and then drop steadily to about 8 per cent in the fifth decennium, about which level they remain till the end. In this series of sixty-four cases, forty-six were calcareous, seventeen were caseous, and one was in the early active stage of infiltration. The size of the nodules varied, and also the number present in each case was not constant. All glands had some sort of connective tissue envelop enclosing them in the mesentery.

Glasgow Medical Journal

23: 241-320 (April) 1926

Insanity from Viewpoint of General Practitioner. R. O. Adamson and others.—p. 241.
Disorders of Capillary Vessels as Factor in Disease. H. M. Walker.—p. 286.

Indian Medical Gazette, Calcutta

61: 157-208 (April) 1926

Pathogenic Effects of Helminthic Infections. A. C. Chandler.—p. 157.
*Curettage and Autogenous Cancellous Grafting for Myeloma. J. B. Hance.—p. 159.
*Pharmacolcgic Action of Some Organic Antimony Derivatives. R. N. Chopra.—p. 162.
*Entomologic Episode of East African Campaign. G. G. Jolly.—p. 164.
*Use of Emetine Intravenously. V. N. Deuskar.—p. 165.
Cholera and River Water: Epidemiologic Suggestions. G. G. Jolly.—p. 167.
Ear, Nose and Throat Diseases Among Calcutta University Students. J. K. Datta.—p. 168.
Reducing Substances in Urine: Their Detection and Identification. J. P. Bose.—p. 173.
Case of Cobra Bite. A. H. Harty.—p. 178.
Case of Recovery After Bite by Russell's Viper. K. V. Raju.—p. 179.
Murder Under Insane Hallucination. S. Lal Sarkar.—p. 179.
Case of Tuberculous Pneumonia. V. N. Deuskar.—p. 180.
Case of Myxedema Associated with Exophthalmic Goiter. R. M. Kar.—p. 181.
Case of Pseudohypertrophy. H. Prasad.—p. 182.

Treatment of Myeloma.—Hance contends that the treatment of myeloma by curettage and autogenous bone grafting is worthy of a more extended trial, and, provided rigid asepsis is observed, holds out the promise of good results. Cancellous grafts, as malleable bone forming mediums, tend, in association with graduated movements and accurate splinting, to an earlier restoration of function and symmetry than do grafts of compact bone.

Action of Organic Antimony Derivatives.—The action of a number of organic antimony derivatives has been tested by Chopra on cats. All these substances have a more or less depressing effect on the heart, circulation and respiration. The systemic blood pressure falls, while the pulmonary blood pressure rises. The volume of the spleen is markedly increased, while the volume of the intestine, kidney and limbs decreases.

Eradication of Jigger Scourge.—Being unable to control infection with jigger fleas in any other way, Jolly resorted to having the troops go barefoot with daily foot inspection and the removal of jiggers. In a month's time the jigger scourge had practically ceased to give trouble. The success of this experiment depended on the fact that the jigger flea can only breed in the body of its host, and that daily inspection prevented this by detection and removal of the female jigger before it had time to develop its eggs. The victims of the parasites themselves became the trap that lured the jigger to its destruction.

Emetine Treatment of Amebiasis.—In seventy cases of amebiasis, including six relapses, the patients were treated by Deuskar with emetine administered intravenously with a case mortality of about 12.5 per cent. Altogether over 1,000 injections were given. Nine injections, each of 1 grain (0.06 Gm.) were given on nine consecutive days, followed by an interval usually of six days, after which another six injections were similarly given, so that each patient at the end of

the course received a total of 15 grains (1 Gm.) of emetine. The use of emetine intravenously, besides being painless, was found safe and simple and appears to be practically free from the dangers it is commonly supposed to involve.

Japan Medical World, Tokyo

6: 19-48 (Feb. 15) 1926

Action of Ammonia on Lungs. I. A. A. Horvath.—p. 19. (To be cont'd.)
*Formation of Urinary and Bile Duct Calculi in Animals Fed on Experimental Rations. Y. Fujimaki.—p. 29.
*Coccoid Formation of B. Diphtheriae. C. Yarisawa.—p. 35.
General Condition of Industrial Hygiene in Japan. Y. Krose.—p. 39.

Experimental Dietary Bile Duct Calculus Formation.—Fujimaki states that animals kept on the protein and vitamin A deficiency diet formed concretions in a relatively short period, a shorter time than the animals fed on either vitamin A deficiency or vitamin A and C deficiency diet. Animals fed on the protein deficiency diet died and did not form calculi. Animals fed on the vitamin A and inorganic phosphorus and calcium deficiency diet formed calculi in a very short time. In these cases bile duct stones were found taking the longest period of all. Urinary calculi found among the animals fed on the vitamin A and inorganic phosphorus and calcium were carbonate calculi (while the stones of the animals fed on the vitamin A, and vitamin A and C deficiency diet, were phosphatic calculi). Bile duct calculi consisted of abundant calcium salts besides cholesterol and pigment.

Coccoid Formation of Diphtheria Bacillus.—During the repeated culture of *B. diphtheriae* on Löffler's blood serum medium, Yarisawa noticed that organisms of some strains assume coccoid forms. Such alteration takes place sometimes even in Löffler's blood serum medium. The most typical coccoid alteration takes place in blood agar culture transplanted from blood serum medium. A similar phenomenon may be seen on glycerine agar or ordinary agar medium. These strains are capable of producing toxin. When a suspension of the coccoid organisms is injected into guinea-pigs, certain toxicity is manifested. Such strains are not particularly rare. Fourteen per cent of Yarisawa's collection of *B. diphtheriae* strains manifested the coccoid alteration on certain mediums.

Journal of Anatomy, London

60: 233-344 (April) 1926

Origin of Blood Cells in Embryonal Liver of Mammals. J. Havet.—p. 233.
Morphology of Thumb. A. L. McGregor.—p. 259.
Cutaneous Nerves of Metazonal Region of Leg and Foot. C. Kosinski.—p. 274.
Coracobranchiales and Cucullaris in Scyllium Canicula. F. H. Edgeworth.—p. 298.
Mummification and Maceration: Female and Negro Skulls. T. W. Todd.—p. 309.
Mesodermal Tumor of Trigon of Bladder in Female Fetus of Sixth Month. H. A. Harris.—p. 329.
Homologies of Prechordal Portion of Skull of Homocephali. E. P. Allis, Jr.—p. 335.
Maldevelopment of Right Parotid Gland. B. Boulgakow.—p. 341.
Unilateral Duplication of Ureter. B. Boulgakow and N. Fahmy.—p. 342.

Journal of Laryngology and Otology, Edinburgh

41: 209-276 (April) 1926

Chordoma of Cervical Vertebrae with Involvement of Pharynx. W. S. Syme and D. F. Cappell.—p. 209.
*Function of Aural Cerumen. E. ff. Creed and V. E. Negus.—p. 223.
Three Cases of Suppuration in Mastoid Cells with Intact Tympanic Membrane. H. B. Tawse.—p. 231.
Scarlet Fever with Otitis Media. H. R. Souper.—p. 233.

Function of Aural Cerumen.—The data given by Creed and Negus point to the lack of any definite association between accumulations of cerumen and middle-ear disease, and the absence of any typical distribution would indicate that it has no important function in man, and that an increase or diminution in its amount, or changes in its consistency, cannot be taken as an indication of the condition of the middle ear. In otosclerosis, however, it has frequently been observed that there is marked deficiency of secretion of cerumen. It is evident from the results of the examinations made that aural cerumen is most decidedly not bactericidal, but that, on the contrary, it serves as a medium in which organisms of great variety may multiply; this is proved by the fact that bacteria were found to be more numerous in specimens of cerumen that had been collecting in the meatus for a considerable time than in those of recent origin. Therefore, it would appear that the only useful function cerumen can serve is to prevent mechanically the entrance of dust and insects to the deep meatus.

Journal of State Medicine, London

34: 187-248 (April) 1926

*Prevention and Arrest of Diphtheria. J. D. Rolleston.—p. 187.
Bronchomycoses. A. Castellani.—p. 202.
Milk Standards in Tropics. R. J. Blackham.—p. 217.
Bacteriologic Diagnosis: Responsibility of Local Authorities. G. E. Oates.—p. 224.
Artificial Sunlight and Infant Welfare Work. J. M. C. Maxwell.—p. 230.

Prevention of Diphtheria.—Rolleston shows that the incidence of diphtheria within recent years has been showing a tendency to increase in London in comparison with New York, where there has of late been a remarkable decline in the prevalence of the disease. After a brief outline of the causation of diphtheria showing the chief factors in its spread, Rolleston points out that, apart from general measures such as isolation and disinfection, the chief methods of prevention of diphtheria are determination by the Schick test of those who are susceptible to the disease and their immunization, either passively by injection of antitoxin or actively by toxin-antitoxin or anatoxin. Each of these methods of immunization involves certain drawbacks, but there is no doubt that more complete and permanent results are to be obtained from the use of active immunization.

Journal of Tropical Medicine and Hygiene, London

29: 101-116 (April 1) 1926

*Ankylostomiasis: Comparative Efficiency of Carbon Tetrachloride, Chenopodium and Thymol in Treatment. C. Manalang.—p. 101.
*Subacute Inguinal Poradenitis, or Climatic Bubo. E. P. de Bellard.—p. 103.

Treatment of Ankylostomiasis.—Manalang's report deals with the results obtained from carbon tetrachloride, chenopodium and thymol used against hookworm. All the way through carbon tetrachloride was superior to the other drugs. Carbon tetrachloride, in doses of 1 cc. per 5.5 Kg., 7 Kg. and 10 Kg. of body weight, and mixed with magnesium sulphate, cured 55, 52, 34 and 53 per cent, respectively; chenopodium, 40 per cent; thymol, 26.3 per cent, with the first treatments, and 73, 75, 61, 67, 33 and 20 per cent, respectively, with the second treatments. The only objection to carbon tetrachloride noticed was that it produced dizziness, vomiting and a varying degree of debilitation. These symptoms, however, are practically nil when the drug is given in doses of 1 cc. to 10 Kg. body weight and in combination with magnesium sulphate. The carbon tetrachloride must be repurified to be safe. Ill effects were not noted with either chenopodium or with thymol.

Subacute Inguinal Poradenitis.—Subacute inguinal poradenitis is described by de Bellard as an autonomous pathologic entity of unknown causation, distinct from all the other usual forms of adenitis but very closely resembling pathologically a tuberculous adenopathy. In the tropics, the disease attacks almost exclusively young men of the white race recently arrived from colder climates. It is endemic in certain zones, with occasional mildly epidemic exacerbations. These outbreaks seem to coincide with long periods of drought and extreme heat. A long prepuce and uncleanliness of the genitals strongly predispose to it. The disease is manifested by an adenitis of the inguinocrural glands, characterized by multiple intraganglionar purulent foci accompanied by periadenitic inflammatory lesions, of a hemorrhagic and suppurative type, with the formation of dense and extensive periglandular adhesions. All nonsurgical treatments so far tried have failed to produce uniformly satisfactory results, besides entailing serious loss of time. Poradenectomy, or the radical excision of all diseased glands, should be the treatment of election and constitutes the only procedure that promises a quick recovery.

Medical Journal of Australia, Sydney

1: 343-372 (March 27) 1926

Insanity. W. A. T. Lind.—p. 343.
Diagnosis and Management of Persistent Occipitoposterior Presentations. F. B. Craig.—p. 352.
*Use of Hydrochloric Acid and Sodium Bicarbonate in Treatment of Certain Common Dyspepsias. F. L. Apperly.—p. 354.

Hydrochloric Acid and Sodium Bicarbonate in Dyspepsias.—Apperly says that before the intestine will accept chyme from the stomach, it must be of a certain salt strength or osmotic value. Any value above or below this causes rejection by the intestine of the food back into the stomach, where it remains until such time as it has by the addition of secreted hydrochloric acid or of sodium chloride or by dilution obtained the correct salt strength. The stomach then empties. The value to which chyme must attain is a constant for each individual, but varies in different individuals from 80 degrees to 130 degrees; that is, about isotonic with sodium chloride in blood (100 degrees equals one-tenth molar solution). When the strength of sodium chloride or acid in the various secretions is low, there is difficulty and delay in the attainment of the required salt value of the food. This results in increased and prolonged regurgitation of duodenal fluids, with, in consequence, lowered acidity and prolonged evacuation time. The administration of hydrochloric acid, sodium bicarbonate or sodium chloride has the effect of raising the salt strength of the food more rapidly to its required value, with the result that regurgitation of duodenal fluids is diminished, acidity is raised and the stomach empties more rapidly. The accommodation of the volume of gastric contents to gastric tonus is thus more rapidly made with relief of symptoms.

1: 373-398 (April 3) 1926

Insanity. W. A. T. Lind.—p. 373.
Relation of Dentistry to Medicine. H. T. J. Edwards.—p. 382.
Dental Radiography. H. C. Nott.—p. 384.
*Hematuria in New-Born Child. N. Dale.—p. 385.

Hematuria in New-Born Child.—Dale reports a case of hematuria, occurring in a child, aged 3 days. During the duration of the hematuria (three days) the infant manifested no signs or symptoms of renal colic and was in good condition throughout. One other interesting feature was the presence of small subungual hemorrhages on four of the fingers of the left hand. The family history was apparently clear. A Wassermann test of the mother's blood was negative.

South African Medical Journal, Johannesburg

21: 205-230 (March) 1926

Pharmacology: Past and Present. J. M. Watt.—p. 206.
Syphilis in Natives. H. J. E. Schultz.—p. 209.
Venereal Diseases in South Africa. F. A. Mitchell.—p. 210.
Conservative Treatment in Gynecology. D. H. Wessels.—p. 213.
Modern Gynecology; Recent Advances in Obstetrics and Gynecology. A. W. Bourne.—p. 217.
Bilharziasis. C. G. Kay-Sharp.—p. 218.
Organization of Medical Profession in South Africa. A. Cox.—p. 220.

South African Medical Record, Cape Town

24: 121-144 (March 27) 1926

General Paralysis of Insane: Treatment. E. W. D. Swift.—p. 122.
Ocular Affections in Neurosyphilis. J. S. du Toit.—p. 125.
Blood Pressure. C. D. Roberts.—p. 127.
Common Affections of Hip-Joint. J. O'B. Hodnett.—p. 130.
Melanosarcoma of Choroid. F. H. Robinson.—p. 132.
Work of Mental Hospital. H. E. Brown.—p. 132.
Meckel's Diverticulum with Persistent Urachus: Case. W. H. Davey.—p. 134.
Case of Puerperal Hematoma. R. D. Osler.—p. 135.

24: 145-168 (April 10) 1926

Treatment of Gonorrheal Infections by Diathermy. H. Gluckman.—p. 146.
Case of Submaxillary Calculus. R. D. Osler.—p. 154.
*Abnormally Large "Axillary Tail" of Breast. C. H. Fouche.—p. 154.
Analysis of Sleep. S. J. Fox.—p. 155.

Axillary "Tail" of Breast.—The "axillary tail" of Spence consists of an extension of functioning breast tissue from the upper lateral quadrant of the breast along the lower and outer margin of the pectoralis major into the axilla. Fouche reports one case.

Annales de Médecine, Paris

19: 241-328 (March) 1926

Abnormal Temperature and Antipyretics. L. Bard.—p. 241.
Forms of Jaundice. A. Landau and J. Held.—p. 264.
Brain Changes with Anemia. S. Draganesco.—p. 280.
Malaria in Pregnancy. G. Delamare.—p. 289.
*Etiology of Mumps. Y. Kermorgant.—p. 301.
Recklinghausen's Bone Disease. G. Guillain et al.—p. 313.

Etiology of Mumps.—Kermorgant experimented with the sediment from centrifugation of the weak salt solution used for mouth rinsing, at the onset of mumps. A dose of 0.1 cc. was injected into the parotid gland or duct of monkeys. From seven to twelve days later the animals developed bilateral parotitis; one presented multiple localizations of an infectious process resembling mumps. The centrifuged sediment cultivated in diluted horse serum revealed the presence of a special spirochete, associated with a bacterium. While separate cultures of this bacterium could be easily obtained, it was impossible to isolate the spirochete. Three monkeys were injected in the parotid or testicle with cultures of the associated bacterium and spirochete. One developed bilateral parotitis; another mumps with bilateral orchitis; the third a bilateral orchitis. The inoculations were also positive in rabbits. Cultures of the isolated bacterium injected alone gave negative results. When whole cultures were passed through a filter, thus withholding the bacteria, there was no growth of the spirochete in the filtrate, until a trace of the bacteria culture was added. Serums from subjects with a history of mumps displayed a lytic and agglutinating action on the spirochete. There was no agglutination of the associated bacteria. The spirochete presents a shiny cylindric body, spirally coiled, with a flagellum at the end. Reproduction is by division. Separated granules on a flagellum are found in the filtrate, where they may give origin to the typical spirochetes. On neo-arsphenamine treatment of the experimental mumps, the orchitis subsided immediately.

Bulletin de l'Académie de Médecine, Paris

95: 383-398 (April 20) 1926

Scopolamine in Parkinsonian Conditions. Polonovski et al.—p. 387.
Gland Swelling and False Phlegmon from Influenza. Rousseau-Saint-Philippe.—p. 391.
*Ultraviolet Rays and Growth. M. Springer and A. Tardieu.—p. 394.

Action of Ultraviolet Rays on Growth.—Springer and Tardieu conducted their experiments on young rabbits which were born and kept further in a dark cellar. While the two strongest and best developed served for controls, the three weaker were treated with ultraviolet rays. Three exposures a week, to a total of fourteen, were given with gradually increasing doses. The skin of the exposed rabbits had not been shaved. The five animals were equally and properly fed. All the treated rabbits grew normally and gained in weight. On the contrary, the weight of the controls became gradually reduced; they finally developed paralysis and died. There were no signs of rickets. They theorize that the formation of ozone, enhanced production of electricity in the organism, as well as the rise of osmotic pressure, explain the favorable action from ultraviolet rays. These rays seem to stimulate the trophic centers and the functioning of the endocrine glands and, consequently, nutrition and growth.

95: 399-424 (April 27) 1926

*Perforation of the Aorta. M. Couto.—p. 406.
*Serodiagnosis of Cancer. H. Hartmann.—p. 412.
Filtrable Virus and Heredity in Tuberculosis. F. Arloing and A. Dufourt.—p. 416.
*Rôle of Water in Acid-Base Balance. S. Ramos.—p. 420.

Syndrome of Perforation of the Aorta.—Couto reports three cases of perforation of the aorta, communicating with the pulmonary artery, which were clinically diagnosed. The symptoms suggesting the diagnosis were the instantaneous appearance of dyspnea, distress, cyanosis and pain in the chest, with a systolic murmur and aortic thrill. This combination presents the pathognomonic picture of perforation of the aorta. Localization of the murmur and thrill to the left of the sternum points to a communication with the pulmonary artery, or exceptionally with the right auricle or ventricle. Localization on the right of the sternum indicates communication with the innominate vein or superior cava.

Serodiagnosis of Cancer.—Hartmann describes an improved technic for the Botelho seroreaction in malignant disease. The protein content of the serum has to be brought to a standard figure, 7 or 8 per cent, diluting or concentrating it. Then 0.5 cc. of the serum is mixed with 3 cc. of a 1 per cent solution of nitric acid in 0.75 per cent sodium chloride solution. On the light foam which forms on agitation, he drips 0.5 cc. of a solution of 1 Gm. of iodine and 2 Gm. of potassium iodide in 210 Gm. of water. The test is negative if the content remains clear; positive, if it becomes turbid. In 145 patients with cancer the reaction was positive in 90.4 per cent; in fifty-five patients with other diseases it was negative in 85.5 per cent. The reaction was positive in women in the first months of pregnancy. In seventeen subjects operated on for cancer, the reaction remained positive in twelve, and the cancer recurred in all in this group. In five, the test became negative after the intervention, and recurrence was observed in only one. The reaction became negative in six of twenty-one cancer patients after roentgen-ray or radium therapy; all appeared clinically cured. In fifteen, the reaction continued positive, and all except one developed recurrences. The reaction was positive in all the rabbits with tar cancer and it was negative in normal animals except in one gravid rabbit.

The Importance of Water for the Acid-Base Balance of the Blood.—Solano Ramos warns that loss of water in purging, vomiting and hemorrhage is responsible for many disturbances ascribed to other causes at operations. The law of Arrhenius explains the acidosis in these conditions as the result of dehydration.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 579-617 (April 16) 1926

Vital Respiratory Capacity. L. Binet.—p. 579.
Kermorgant's Theory of Mumps. C. Zoeller.—p. 582.
*Phenols in Infants' Urine. R. Debré et al.—p. 586.
Research on Hemoglobinuria. Emile-Weil and Stieffel.—p. 587.
Puerperal Septicemia from the Perfringens. P. Teissier et al.—p. 596.
*Mediastinal Hernia. L. Bernard et al.—p. 602.
*Hyperglycemia Without Glycosuria. F. Rathery and Froment.—p. 609.
Masked Forms of Amebiasis. Trabaud.—p. 614.

Urine Phenols in Infants.—Debré, Goiffon and Crama noted an increase of the urine phenols from an average of 0.008 to 0.024 per cent in infants with digestive disturbances. The phenol content returned to normal with recovery, or rose still higher when the condition grew worse. Increase of phenols occurred also in acute infectious diseases, as bronchopneumonia, otitis, or with suppurations, as pyodermitis, without coexistence of digestive disturbances. The phenols eliminated by the urine seem to be a better index of the intensity of intestinal putrefaction than the elimination of indol or skatol.

Mediastinal Hernia Complicating Artificial Pneumothorax.—In Bernard, Valtis and Farret's three cases, the mediastinal hernia was caused by insufflation of excessive amounts. The weak points of the mediastinum yielded under the high gas pressure in the pleural cavity. The hernia occurred from two to six months or three years after the beginning of the pneumothorax treatment. The ages ranged from 17 to 25. In these three cases, the hernia was in the left pleura, and projected on the right side. The hernia subsided with longer intervals and less pressure. The hernia did not impede the favorable course of the artificial pneumothorax.

Hyperglycemia Without Glycosuria.—Rathery and Froment found an excess of blood sugar, without glycosuria, in subjects with skin and joint affections, and with disease of the kidney, liver or biliary tract. They observed this also in four cases of obesity, in one of postencephalitic parkinsonism, the adiposogenital syndrome, and cancer of the vertebrae. The hyperglycemia without glycosuria does not seem to be connected with functional disturbances of the kidney as in nephritis. It is apparently entailed by some disturbance in carbohydrate metabolism, pointing to a prediabetic condition.

50: 619-681 (April 23) 1926

*Epinephrine Treatment of Asthma. Pagniez and Escalier.—p. 619.
Glycemia in Skin Diseases. Lortat-Jacob and P. Bourgeois.—p. 621.
Epidemic Encephalitis Simulating Dementia Praecox. Laignel-Lavastine and R. Valence.—p. 623.
Hernia of Muscle in Tabes. Idem.—p. 627.
*Sympathectomy for Arteritis. A. Cain and Hamburger.—p. 629.
Acquired Displacement of the Heart. Monier-Vinard and A. Alibert.—p. 633.
Morbid Conditions with Hypobilirubinemia. Landau and Held.—p. 637.
Lesions of Pulmonary Artery with Mitral Stenosis. C. Laubry and M. Thomas.—p. 639.
*Anaphylaxis and Acid-Base Balance. J. Parisot et al.—p. 647.
*Etiology of Rheumatic Mitral Stenosis. P. Merklen and Schneider.—p. 650.
Serum Plus Vaccine in Bronchopneumonia. d'Oelsnitz.—p. 654.
Hyperglycemia Without Glycosuria in Skin Diseases. L. Hudelo and R. Kourilsky.—p. 662.
Therapeutic Pneumothorax in Children. P. Armand-Delille et al.—p. 667.
Purified Diphtheria Antitoxin. J. Comby.—p. 670.
*Death from Fixation Abscess. J. Comby.—p. 678.
Nephritic Pericarditis and Acidosis in a Diabetic. C. Oddo and J. Zuccarelli.—p. 679.

Prolonged Use of Epinephrine in Asthma.—A remarkable tolerance for epinephrine was manifest in Pagniez and Escalier's tabetic patient with asthma. The paroxysms, as frequent as four a day, could not be relieved otherwise than with injections of epinephrine. The woman had been given 2,172 injections, of 0.0005 Gm. each, within eighteen months. The total of epinephrine injected in 1924 amounted to 0.696 Gm. The injections appeared to be without influence on the blood pressure; but were probably responsible for other phenomena such as paleness, accelerated pulse and palpitations. Finally a few grave syncopes occurred, and the injections were discontinued. Evidently not the blood pressure alone, but other signs may serve as the criterion of the tolerance for epinephrine.

Sympathectomy for Arteritis Obliterans.—Cain and Hamburger report a case of periarterial sympathectomy on the brachial artery to relieve arteritis obliterans in the right hand. The usual remedies as well as antisyphilitic treatment had been without avail. The intolerable pain subsided completely two days after the operation, the aspect of the hand changing gradually to normal. Three weeks later the woman was able to begin to use the hand. They add that the interval since the operation is only one month.

Alimentary Anaphylaxis and Acid-Base Balance.—Parisot, Simonin and Verain observed a case of intolerance for milk, eggs and peas in a woman, aged 30. Ingestion of a minimal portion of any of these substances induced, among other phenomena, urticaria, nausea, diarrhea, headache and fever (the woman was tuberculous). Examination of the acid-base balance revealed a low p_H and reduced alkali reserve. A mixture of equal parts of sodium bicarbonate and citrate was given by mouth in a daily dose of from 15 to 30 Gm., in water. The alkali reserve rose from 42 to 63 per cent (by volume) in ten days. Then every day one of the previously nontolerated substances was given, and no anaphylactic manifestations were noted. Since then the woman eats freely of the long forbidden foods.

Rheumatism in Etiology of Mitral Stenosis.—Merklen and Schneider draw their conclusions from thirty-two cases of rheumatic mitral stenosis. The disease occurs chiefly in women, and is frequently associated with dystrophic conditions. This suggests that the female endocrine glands present a favorable ground for the development of stenosis; especially if there is any disturbance. The rheumatic virus seems to affect first the thyroid, which seems to be more vulnerable in women than in men. Consecutively other glands are involved, thus inducing humoral and dystrophic changes responsible for the mitral stenosis.

Death from Fixation Abscess.—Comby cites a case in which death was apparently caused by a fixation abscess. This occurred in South America, where the fixation abscess was applied for treatment of dementia praecox, in a boy, aged 14. It is possible that too large a dose of turpentine (2 cc. instead of the usual 1 cc.) may be incriminated for the tissue necrosis and consecutive fatal hematoma.

Comptes Rendus de la Société de Biologie, Paris

94: 361-420 (Feb. 19) 1926. Partial Index

Herpes Virus in Human Organism. P. Teissier et al.—p. 377.
*Cheyne-Stokes Respiration. V. Pachon and P. Delmas-Marsalet.—p. 391.
Vitality of Spermatozoa in Syphilitics. Bertin and Breton.—p. 397.
*Rôle of Calcium in Bacteriophagy. J. Bordet.—p. 403.
Significance of Carotid Gland. H. de Winiwarter.—p. 407.
Iso-Antibodies in Maternal and Placental Blood. Collon.—p. 418.

Cheyne-Stokes Respiration in a Decerebrate Dog.—Pachon and Delmas-Marsalet divided the crura cerebri in a chloralosed dog. The corpora quadrigemina were left intact. The animal was then placed in a thermostat; it developed Cheyne-Stokes respiration analogous to that in man, for over two hours. Obviously the posterior corpora quadrigemina do not share in the occurrence of Cheyne-Stokes respiration; it is essentially a phenomenon from insufficiency of the brain.

Rôle of Calcium Salts in Transmissible Microbic Autolysis.—To test tubes containing 5 cc. of an alkalized bouillon, was added one drop of a 1 per cent solution of calcium chloride or fifteen drops of 1 per cent sodium oxalate. Bordet used for the experiments dysentery bacillus bacteriophage element (A) or a bacteriophage obtained from the action of a lysogenic colon bacillus on the dysentery bacillus element (L). Two drops of one element were introduced in each of the calcium or oxalate tubes. The tubes with the A element were inoculated with colon or dysentery bacilli. Lysis was manifest in the tubes with oxalate or calcium, in the presence of the A element, while with the L element, microbic lysis occurred only in the tubes with calcium. The L element in the oxalated bouillon seemed to be deprived not only of the lytic property but also of the power of regeneration. On the other hand, the regeneration of the A element occurred in both the oxalate and the calcium bouillon. The regenerating power was still retained after numerous passages in oxalate bouillon inoculated with the sensitive microbe. Regeneration of the L element and its lytic action in calcium bouillon did not seem to be impaired by previous contact with sodium oxalate.

Gynécologie et Obstétrique, Paris

13: 241-320 (April) 1926

Fixation of Uterus by Ligamentopexy. Cotte and Peycelon.—p. 241.
*Adenoma of Uterine Cervix. E. Douay and A. Soimaru.—p. 245.
Malformations of Lower Part of Body. M. S. Serdukoff.—p. 264.
Pituitary Extract. E. A. R. de Cotret.—p. 276.

Adenoma of Uterine Cervix.—Douay and Soimaru have treated forty cases of adenoma of the cervix within three years. The affection was most frequent between the ages of 30 and 50; one patient was 72 years old. The adenoma may be localized, and present a vegetating, polypous or cystic form. A diffuse adenoma, occupying the whole of the cervix was noted in 78 per cent of the cases. Under the influence of caustics or the galvanocautery, the adenoma may develop into epithelioma, especially the vegetating form, unless the destruction has been complete. Amputation of the cervix apparently induces a definite cure.

Journal de Chirurgie, Paris

27: 241-384 (March) 1926

*Tuberculosis of the Knee. P. Fredet.—p. 241.
Strictures of Inflammatory Origin in the Rectum. Radice.—p. 260.

Technic for Resection of Tuberculous Knee.—Fredet gives an illustrated description of his method for extracapsular resection as applied in twenty-seven patients, aged from 17 to 61. All, except two, seemed clinically cured; there was consolidation of the bones in three months, with restoration of function. Roentgenograms showed perfect union of the bones. Some of those thus treated were able to resume hard manual work. There was no operative mortality.

Marseille Médical

63: 545-600 (April 5) 1926. Partial Index

Radium and Surgery in Cancer of the Uterus. G. Bonnal.—p. 545.
*Case of Fibrinuria. E. Chauvin.—p. 561.
Dementia Praecox and Mental Confusion with Pulmonary Tuberculosis Wahl.—p. 566.
Meningeal Hemorrhage with Anthrax Septicemia. Rouslacroix and F. Trabuc.—p. 574.
Malignant Edema Contracted at Necropsy. F. Trabuc.—p. 581.

Fibrinuria with Cancer of the Kidney.—The urine of Chauvin's patient coagulated to such an extent that it clung to the receptacle when it was turned upside down. The phenomenon occurred repeatedly, without association of any characteristic symptoms. Examination confirmed the fibrinous nature of the urine clots. At the operation, the kidney cancer was found partly covered by successive layers of clotted urine. Fibrinuria is usually considered a symptom of bladder origin, but in this case the kidney was responsible for it.

Paris Médical

59: 385-404 (April 24) 1926

Inaugural Lecture of Pathology Course. Rathery.—p. 385.
*Strophulus. P. Vallery-Radot and P. Blamoutier.—p. 398.
Oxygen Treatment of Whooping Cough. G. Boeldieu.—p. 401.

Peptone Treatment of Strophulus.—Pasteur Vallery-Radot and Blamoutier used peptone desensitization treatment with excellent results in twenty children, aged from 1 to 4, with this papular eruption. The action was immediate in sixteen, retarded in four. The most rapid and durable effect was apparently induced with a preparation of meat and fish peptones mixed with egg and milk extracts. A teaspoonful was given an hour before each meal. Children under 3 years were fed four times a day, the older only three times. A suitable diet was strictly observed, avoiding substances liable to induce the rash, especially eggs. The peptone was given for ten days, the series repeated at five day intervals or longer, until a month after the last papule had disappeared. The treatment was continued for months to prevent fresh outbreaks of the rash. The children were reexamined from a month to a year later; no instance of recurrence was found.

Presse Médicale, Paris

34: 465-480 (April 14) 1926

*Nitrous Oxide Anesthesia. E. Desmarest.—p. 465.
Mineral Water Treatment of Asthma. J. Galup.—p. 466.
Fluorosis or Fluorin Cachexia. H. Cristiani.—p. 469.
Oxalic Acid in Cerebrospinal Fluid. M. Nathan.—p. 471.

Nitrous Oxide Anesthesia.—In Desmarest's opinion, nitrous oxide is especially advised in exhausted, infected or anemic patients, when chloroform or ether is contraindicated. Owing to the hypertension-inducing effect nitrous oxide maintains the heart action and is, therefore, useful in prolonged operations. It was never followed by postoperative acidosis in his diabetic patients. It is the best anesthetic for minor operations, in reduction of dislocations, and painful dressings. It seems to be more effectual and less dangerous than ethyl chloride. No complications on the part of the lung, liver or kidney were ever observed.

34: 481-496 (April 17) 1926

*Sanocrysin Treatment. L. Bernard.—p. 481.
Anatoxin Immunization Against Tetanus. Zoeller and Ramon.—p. 485.
Homo-Organic Hormones in Man. C. Richet, Jr.—p. 486.
Marvels of the Bird Wing. Chapeaux and Servajean.—p. 491.

Sanocrysin in Pulmonary Tuberculosis.—Bernard treated twenty-six tuberculous patients with sanocrysin for a few months. The gold salt solution was injected intravenously (0.25 Gm. to 1 Gm.). A total of 10 or 12 Gm. was never surpassed. Favorable results, obviously due to the treatment, were noted in six men and three women; favorable results in which, besides the sanocrysin, other factors might have been responsible, were noted in eight men. The action was null in four men and three women, and unfavorable in two men, causing death in one. The treatment appeared most effectual in the ulcerative form of tuberculosis, with cheesy degeneration and an acute course. The effect was insignificant in the chronic form. The conclusion is that sanocrysin does not seem to have a specific action on pulmonary tuberculosis.

34: 497-512 (April 21) 1926

Arsenicals by the Mouth in Amebiasis, etc. P. Ravaut.—p. 497.
Deep Roentgentherapy in Cancer of the Breast. C. Chambacher and W. Rieder.—p. 499.
Some of the New Liver Function Tests. J. Rouillard.—p. 501.
Institutional Treatment of Surgical Tuberculosis in Adults. Duguet and Clavelin.—p. 507.

34: 513-528 (April 24) 1926

Inaugural Lecture of Course on Medical Physics. Strohl.—p. 513.
*Bilateral Artificial Pneumothorax. F. Tobé and J. Terrasse.—p. 518.
Depopulation of the Marquesas Islands. L. Rollin.—p. 523.

Simultaneous Bilateral Artificial Pneumothorax.—The possibility of a complication of bilateral artificial pneumothorax by perforation of the lung should always be borne in mind.

The danger may be avoided, Tobé and Terrasse say, if the first pneumothorax is elective, prolonging the intervals between the insufflations and keeping the amounts small. The bilateral pneumothorax failed in one of their cases on account of pleural adhesions; in another case it was well tolerated for a year, until the patient died from old laryngeal lesions. In three cases, of seven, eight and ten months' standing, the results to date are similar to that from unilateral pneumothorax.

Policlinico, Rome

33: 577-611 (April 26) 1926

Meningism from Cocaine. L. Tonelli.—p. 577.
Raynaud's Disease. P. Dal Maso.—p. 581.
Mercury as a Diuretic. V. Debenedetti.—p. 585.

33: 165-220 (April 15) 1926. Surgical Section

Kidney Function Tests. A. Cassuto.—p. 165. C'td.
Tumor of Tunica Vaginalis. R. Micotti.—p. 185.
The Megaesophagus. S. G. Giardina.—p. 200.

Riforma Medica, Naples

42: 337-360 (April 12) 1926

Otorhinolaryngology in Peace and War. G. Bilancioni.—p. 337.
*Skin Reactions. F. Flarer.—p. 346.
Endocrine Therapy. E. Aievoli.—p. 351.

Skin Reactions.—Flarer compared in tuberculous children the reaction to tuberculin and to cutaneous application of a formaldehyde solution and of oil of turpentine. He agrees with those who assume an increased irritability of the tissues of tuberculous subjects to nonspecific substances, as well as to tuberculin.

42: 361-384 (April 19) 1926

Inguinal Hernia. D. Giordano.—p. 361.
Pathogenesis of Angiocholecystitis. G. Pansini.—p. 363.
*Protein Treatment in Syphilis. A. Catalano.—p. 369.
Medicolegal Institute. R. Magnanimi.—p. 378.
Maragliano's Tuberculosis Vaccine. E. Curti.—p. 380.

Protein Treatment in Syphilis.—Catalano injected intramuscularly at five day intervals from 5 to 10 cc. of boiled milk in general paresis and tabes. Besides this he used bismuth. He failed in three cases of tabes, but had fine results in five out of eleven general paralysis patients.

Archivos Españoles de Pediatría, Madrid

10: 129-192 (March) 1926

*Pylorostenosis in Infants. J. Estella y B. de Castro.—p. 129.
*Habitual Vomiting of Infants. R. Garelly.—p. 145.
*Pathogenesis of Pylorospasm. Damaso Rodrigo.—p. 165.
Multiple Malformations in New-Born Infant of Syphilitic Father. F. Cirajas.—p. 172.

Dietetic Treatment of Pylorostenosis in Infants.—Estella concludes from his extensive study of pylorostenosis in infants that there are no certain signs for differentiation of the organic and functional forms, and consequently, medical measures should be given a thorough trial first. The indication for operation depends on the symptoms, clinical course, radiologic, digestive and trophic findings, without being misled by published statistics. Thick cereal owes its efficacy not only to its consistence but to the abundance of carbohydrates and the lack of fats.

Habitual Vomiting in Infants.—Garelly states that 25.1 per cent of 442 infants examined vomited more or less regularly after nursing, from some unknown cause. If the peristolic functioning seems excessive, while the milk coagulates abnormally slowly, treatment should aim to promote coagulation; there is less tendency to vomit when the stomach contents are of a thick consistency. Condensed milk might be given a trial, and alkalis with excessive acidity. Sodium citrate has the advantage that it retards coagulation of the milk and allows better penetration by the digestive juices while neutralizing the irritating acid. Danielopolu has demonstrated that drugs which act on the involuntary nervous system affect the vagus or the sympathetic according as the dose is large or small. Holding the child erect promotes expulsion of gases. As most of these children are gaining in weight, and as the vomiting often ceases spontaneously, it must be regarded as merely an exaggeration of a physiologic process.

Pathogenesis of Pylorospasm.—Damaso Rodrigo comments on the variability of the causes which may induce pylorospasm. In a case of habitual vomiting described, spasmophilia and vagotony could be excluded and the symptoms subsided at once when a teaspoonful of a 10 per cent solution of bismuth carbonate in an acacia solution was given immediately before and after feeding. This treatment was suggested by the observation that the infant, who had been vomiting regularly almost from birth, did not vomit the contrast barium suspension, given for roentgenoscopy.

Archivos Latino-Amer. de Pediatría, Buenos Aires

20: 1-77 (Jan.) 1926

*Myoclonia. E. Portu Pereyra and J. M. Estapé.—p. 1.
*Cephaloplegia. A. Carrau.—p. 11.
A Case of Dermatomyositis. J. Bonaba.—p. 15.
Protection for Mothers and for Children. G. Aráoz Alfaro.—p. 21.
*Case of Essential Meningeal Hemorrhage. J. A. Bauzá.—p. 38.
*Meningitis of Obscure Etiology. Alice Armand Ugón.—p. 43.
Congenital Myatonia. A. Carrau and Penco.—p. 51.

Myoclonia.—In two of the four cases described, the myoclonus was probably due to epidemic encephalitis as there were hundreds of cases of epidemic hiccup in town at the time and many cases of epidemic encephalitis developed afterward. In both these children the clonic spasms subsided during sleep, and the cure was complete in eighteen or fifty-six days, under psychotherapy. The clonic spasms became more pronounced when the child was excited. In another case the myoclonia was traceable to birth injury, which had entailed paresis of the right arm and torticollis; in the fourth, to a convulsion at the age of 2 after which the myoclonus had developed and progressed. The clonic spasms occurred in paroxysms, especially severe after excitement. The cerebrospinal fluid was normal in these two chronic cases. Myoclonia seems to be a striatal affection (hemorrhage, softening) for which various morbid causes may be responsible.

Cephaloplegic Form of Anterior Poliomyelitis.—Carrau recalls that diphtheria as well as infantile paralysis may be responsible for the sudden cephaloplegia, with loss of tendon reflexes and spontaneous recovery in five to twelve days, to which Figueira called attention first. He was unable to demonstrate conclusively the connection with acute poliomyelitis as the children showed no other symptoms. Carrau here provides the missing link, as the child presented the typical cephaloplegia accompanied by symptoms of unmistakable poliomyelitis, which ran a long course with a final trend to recovery.

Meningeal Hemorrhage of Unknown Cause.—Bauzá's patient was a girl approaching puberty who suddenly developed symptoms of spontaneous subarachnoid hemorrhage. The favorable course, without sequelae, suggests that it was of essential nature, possibly an attempt at vicarious menstruation as a drop of blood was found on the body linen the tenth day.

Meningitis.—In two of the three cases described, the symptoms indicated epidemic meningitis but no meningococci could be detected. The children, aged 3 and 5, recovered under serotherapy. In the third case, the clinical picture was that of tuberculous meningitis, but the child recovered in six weeks and inoculation of animals was negative. The bacteriologic findings in all three had been constantly negative.

Brazil-Medico, Rio de Janeiro

1: 81-94 (Feb. 13) 1926

*The Oculocardiac Reflex in Surgery. Americo Valerio.—p. 81.
Survey of Recent French Literature. Desaux and Trolard.—p. 88.

The Oculocardiac Reflex in Surgery.—Valerio urges testing the sympathetic nervous system before general anesthesia, as a routine practice. With a positive oculocardiac reflex, chloroform should be avoided, he says, and ether should be preceded by atropine. With exaggeration of the reflex, inhalation anesthesia should not be attempted. With inverted oculocardiac reflex, the prognosis is relatively favorable, but if the reflex is abolished, the prognosis is grave.

1: 95-110 (Feb. 20) 1926

*Treatment of Epitheliomas of the Skin. Cassio de Rezende.—p. 95.
*Thrombosis of the Heart. M. Torres.—p. 100. C'cn.

Caustic Treatment of Epitheliomas of the Skin.—De Rezende's arsenic paste has proved its efficacy in nearly ten years' experience. It does not compete with radiotherapy, but

when the latter is not available, the intense inflammatory reaction to the daily application of the paste destroys the lesions down into the subcutaneous tissue. The photographs reproduced confirm the complete cure, one in a man of 80. The vehicle is resin cerate, 10 Gm., to which are added 0.25 Gm. each of arsenious acid and copper sulphate; 0.5 Gm. of antimony and potassium tartrate and 0.75 Gm. of quinine, with 1 Gm. each of antipyrine, phenol crystals, camphor, chloral and menthol. He ascribes the rapid healing of the lesion after suspension of the applications to the intense edematous reaction in the tissues around. In the cases mentioned, three applications completed the course in three weeks or a month.

Thrombosis of the Heart.—Torres concludes his long study of endocarditis with vegetations in the heart wall. He says that it is comparatively common in Rio in patients with grave cardiac insufficiency. Seven cases are described with necropsy examination. The valves were free from recent inflammatory changes. The thrombi adhere to the parietal endocardium, and there is always infarction of the lungs, kidneys, brain and spleen. There is usually no history of acute articular rheumatism. He proposes the term endocarditis muralis for this afebrile variety of endocarditis.

Revista de la Soc. de Urología, Santiago

1: 3-66 (Oct.) 1925

Syphilitic Disease of Right Testicle and Cord. A. Lois.—p. 3.
Influenzal Epididymitis. A. Lois.—p. 5.
Genito-Urinary Tuberculosis. A. Valenzuela.—p. 7.
Ureteropyelonephritis. J. Billard.—p. 10.
Infiltrated Neoplasm of the Bladder. E. Ibarra Loring.—p. 15.
Mercurial and Oxalic Poisoning. G. Ahumada.—p. 18.
Later History in Case of Renal Tuberculosis. W. Sommer.—p. 21.
*Correction of Floating Kidney. J. L. Bisquertt C.—p. 23.
*Gonococcal Spondylitis. W. E. Coutts.—p. 26.
Hydronephrosis from Compression of Ureter. R. Baltra.—p. 30.
Tuberculous Pyonephrosis. J. L. Bisquertt C.—p. 32.
*Complications of Mumps. W. E. Coutts and H. Vicuña.—p. 36.
Bilateral Renal Tuberculosis. C. Aguirre.—p. 43.
Gonococcal Arthritis. I. Diaz Muñoz.—p. 46.
Albuminuric Retinitis. C. Lobo Onell.—p. 49.
Classification of Nephritis. H. Chabanier.—p. 55.
Gonococcal Ophthalmia. Espildora Luque.—p. 60.

Nephropexy.—Bisquertt suspended the floating right kidney in the case described with a strip of fascia lata. The strip was 1½ cm. wide and was passed under a bridge cut for it in the front and rear of the capsule at the superior pole; with this the kidney was suspended from the lowest rib. He has been applying this technic for several years and always with gratifying results.

Gonococcus Spondylitis.—Coutts attributed the vertebral disturbances to the gonococcus by exclusion, the man having contracted gonorrhea within the year. An intense focal reaction followed an intradermal injection of a gonococcus vaccine (700 millions of living gonococci and three days later, 2,000 millions). The man was able to get up in two days after the last, and conditions rapidly returned to clinically normal.

Hemotherapy in Mumps.—Coutts and Vicuña report that autohemotherapy had a prompt and decided influence on the orchitis and other genito-urinary complications of mumps in a recent epidemic. One of the five young men whose cases are described had extreme congestion of the prostate in addition to orchitis and epididymitis, and retention of urine compelled catheterization. They injected 5 cc. of own blood four or five days in succession. The fever dropped at once after the first injection.

Semana Médica, Buenos Aires

1: 1-56 (Jan. 7) 1926

*Erythema Nodosum and Tuberculosis. G. Aráoz Alfaro.—p. 2.
*The Gastric Contents in Diagnosis. P. Escudero.—p. 7.
Methods to Induce Abortion and Sterilize at Same Time. D. A. Rojas.—p. 8.
Electrocardiography in Hypoaphyxia. Martini and Comas.—p. 13.
Roger's Disease and Transposition of Organs. Bullrich and Del Castillo.—p. 23.
*Malaria Treatment of General Paralysis. G. Bosch and A. Mó.—p. 25.
Quackery. J. I. Iriarte.—p. 35.
Gunshot Wounds of the Liver. D. Garcia Diaz.—p. 37.
Treatment of Hemoptysis with Tartar Emetic. O. P. Curti.—p. 38.
Vision Without Eyes. E. Vuillermoz.—p. 39.
Telluric Vibrations and Segmentation. A. Mary.—p. 41.

Erythema Nodosum.—Aráoz Alfaro asserts that erythema nodosum may be the manifestation of various infections, but tuberculosis can be incriminated in the majority. In certain cases it seems to be a primary affection representing an attenuated and masked form of tuberculosis. He has encountered another group of cases in which the erythema nodosum seemed to be the final episode in a fever continuing through several weeks in children with glandular disease and positive tuberculin test. In these cases, the erythema seemed to act like a fixation abscess, arresting the bacillary fever and materially improving the general health. One infant, 18 months old, had been having fever for two weeks and miliary tuberculosis was feared, but the discovery of a nodule on the leg suggested the possible onset of erythema nodosum, and he notified the parents that there would probably be a crop of them, with high fever, after which the child would be healthier than before. The course of the case realized his prophecy completely. In a second case of the kind the child was 2 years old, and both have been in much better health since the erythema a year and a half or two years ago.

Diagnosis of Stomach Disease.—Escudero has found the gastric contents apparently normal in certain cases of functional or organic derangement of the stomach. In 401 stomach patients examined, hypoacidity was found in 54.4 per cent of the 248 cases of functional dyspepsia and in 52.2 per cent of the 153 with organic disease; normal acidity was found in 29 and 24.1 per cent respectively, and hyperacidity in 16.5 and 23.5 per cent. Repeating the analysis gave conflicting findings in 30 per cent. There does not seem to be any definite expression of the stomach chemistry corresponding to any special type of gastropathy.

Malaria Treatment in General Paralysis.—Bosch and Mó report results surpassing anything previously realized. Of their forty patients thus treated, 17.64 per cent have been attending to business for up to two years to date; 29.41 per cent have returned to ordinary home life, and only 20.58 failed to show benefit. One in advanced cachexia died and another after an operation for appendicitis. The others are still under treatment.

Archiv für Kinderheilkunde, Stuttgart

78: 1-80 (April 16) 1926

Electric Irritability, Acidosis and Vegetative System. F. Goebel and S. Hillenberg.—p. 1.
*Milk-Free Diet. E. Hindes.—p. 9.
The Child's Testimony as Witness. U. Peiper.—p. 20.
Treatment of Congenital Syphilis. H. Knauer.—p. 32.
*The Blood in Nutritional Disturbances. A. F. Reschid.—p. 35.
Uric Acid Elimination in Infants. Steudel and Ellinghaus.—p. 41.

Milk-Free Diet.—Hindes found in Transcaucasia that a milk-free diet prevented the nutritional disturbances, occurring in summer, better than any other measures, including careful preparation and supervision of milk.

The Blood in Nutritional Disturbances.—Reschid finds the shifting of the leukocytes to the left a valuable aid in differentiating between alimentary and infectious nutritional disturbances of infants.

Archiv für die gesamte Physiologie, Berlin

212: 169-374 (March 23) 1926. Partial Index

*Influence of Coffee on Sense Acuity. R. Allers et al.—p. 183.
Connection Between Labyrinth and Tonus of Extremities. F. Arndts.—p. 204.
Technic for Esophageal Fistula. S. A. Komarow.—p. 212.
*Structure of Birds and the Flight Problem. F. Groebbels.—p. 215.
Action of Spleen and Marrow Extracts on the Blood. Kokas.—p. 229.
Migration of Substances from Blood Plasma. A. Wittgenstein and H. A. Krebs.—p. 268.
Vasodilators in Cervical Sympathetic. Feldberg and Schilf.—p. 365.

Influence of Coffee on Sense Acuity.—In 2,500 observations on three persons, Allers, Freund and Präger found that black coffee had a more or less specific influence on the visual field, the direction of the influence varying with the natural reaction of the subject. The normal tendency to exaggeration of peripherally seen movements was increased or decreased; the visual field was enlarged or contracted. One of the three subjects had the visual field contracted by 20 degrees or more outward, and by 10 degrees both in the upper and lower

halves. The pulse was also extremely retarded in this case. The second subject had the visual field enlarged by 10 degrees. In the third, it was unmodified. In both the latter, the pulse was accelerated. It seems probable, though not certain, that the retina itself is the structure affected by the coffee. The tests were made with a cup of black coffee made from about thirty coffee beans.

The Structural Plan of Birds and the Flight Problem.—Groebbels weighed and measured forty-six species of birds. He found that a comparison of body weight and wing surface did not help to elucidate the problem of flying capacity, nor did the comparative weight of the muscles used in flying. The narrower the wing in comparison with its length, the greater is the flying power. In all the species examined, the anterior plus the posterior margin of the wing measured the same as the span of the wings. In the best flyers the measurements of the anterior wing margin, posterior wing margin and one-half the span of the fully expanded wings were exactly or approximately equal. In the proportion in which the posterior wing margin exceeds the anterior in length, is the flying power lessened. The longer the body in comparison with the length of the outstretched wing, the less is the flying power. In those birds which utilize the wind for flight, definite relations exist between the measurements of span and contours when the wing is partially, as well as wholly, expanded. Measurements made on the winning craft in a flying contest illustrate the applicability of these laws to aircraft construction.

Archiv für Verdauungs-Krankheiten, Berlin

38: 1-142 (April) 1926

*Fructosuria. I. Snapper et al.—p. 1.
Vicarious Menstruation. L. Auerbach.—p. 15.
Thyroid Treatment of Obesity. R. F. Weiss.—p. 26.
*Peptic Ulcer. L. Jarno.—p. 46.
*Endocrines and Ulcer. L. Alkan.—p. 55.
Paradoxic Proctostasis. J. Schaffler.—p. 79.
Diagnosis of Cancer of Intestine from Stomach Content. H. Illoway.—p. 87.
Science in Spain. J. Ma Rossell.—p. 98.

Fructosuria.—Snapper, Grünbaum and Creveld describe a case of levulosuria. The dextrose tolerance was normal. Insulin had no influence on the levulosuria.

Peptic Ulcer.—Jarno found a low concentration of cholesterol in the serum from patients with gastric ulcer.

Endocrines and Ulcer.—Alkan had good results in treatment of gastric ulcer with injections of an extract from parathyroid glands.

Deutsche medizinische Wochenschrift, Berlin

52: 649-688 (April 16) 1926

Paratyphoid. Uhlenhuth and W. Seiffert.—p. 649. C'td.
Lipoid Antibodies. H. Sachs and Klopstock.—p. 650.
*Gastric Secretion and Diuresis. W. Arnoldi and M. Schechter.—p. 651.
*Pregnancy Glycosuria. D. Adlersberg and O. Porges.—p. 653.
*Serologic Test for Cancer. K. Volkmann.—p. 655.
Kidney Disease or Appendicitis? J. Hohlbaum.—p. 657.
Lymphomas of Respiratory Passages. W. Klestadt.—p. 659.
Complications of Peritonsillitis. G. Claus.—p. 661.
Vitamins in Yeast. M. Heincke.—p. 662.
Illumination with Daylight Effect. Foerster.—p. 663.
Iron Therapy. F. Fischler.—p. 664.
Epidural Injection. H. H. Hess.—p. 666.
Genital Herpes. D. v. Pezold.—p. 667.
Transportation of Patients. P. Frank.—p. 668.
"Prevention of Syphilis After Contact." J. Heller.—p. 669.
Reply. Hübner.—p. 670.
Cancer Statistics. F. Prinzing.—p. 671.
History of Syphilis. K. Dohi.—p. 672. C'tn.
Professional Tribunals. S. Alexander.—p. 673.

Gastric Secretion and Diuresis.—Arnoldi and Schechter gained the impression that subjects with hyperacidity have a larger renal excretion of water and solids and a stronger movement of the fluids and solids through the body, a stronger action of the liver and a weaker of the pancreas than normal subjects. There are analogies with diabetes, including a lowered utilization of sugar. The changes are the opposite in subacidity.

Pregnancy Glycosuria.—Adlersberg and Porges found in eight of fourteen pregnant women an increased permeability of the kidneys for dextrose. Two had a lowered sugar tolerance, resembling diabetes. After from two to five days of a diet free from carbohydrates, the experimental hyperglycemia and glycosuria were more pronounced. They suggest to use this method in tests for pregnancy.

Serologic Tests for Cancer.—Volkmann had good results with various modifications of the Abderhalden test in genital carcinomas.

52: 689-732 (April 23) 1926

Paratyphoid. Uhlenhuth and W. Seiffert.—p. 689. C'tn.
Diet in Fever. L. F. Meyer.—p. 691.
Basal Metabolism. J. Kapfhammer.—p. 694.
*Perineal Lacerations. M. Henkel.—p. 696.
Surgery of Glaucoma. P. A. Jaensch.—p. 697.
*Ectoscopy. E. Weisz.—p. 699.
Alveolar Pyorrhea. W. Praeger.—p. 700.
Treatment of Furunculosis. K. Zieler.—p. 701.
Treatment of Erysipelas. Birkholz.—p. 702.
Treatment of Leukorrhea. H. Alexander.—p. 704.
Gonorrhea in Female. Lucke.—p. 704.
Injury of Glans Penis. A. Joseph.—p. 706.
*Familial Pernicious Anemia. R. Tscherning.—p. 707.
Import of Incomplete Coating of Tongue. E. Levinger.—p. 707.
Blood in Tabetic Crises. H. Fleischhacker.—p. 708.
Dermatitis with Encephalitis. A. B. Selisky.—p. 709.
Infectious Diseases. O. Moog.—p. 709.
Inability to Attend Court. G. Strassmann.—p. 712.
"Suicide Intent as Indication for Abortion." Niedermeyer.—p. 714.
History of Syphilis. K. Dohi.—p. 714. C'cn.
The Physician and the Automobile. H. Kruspe.—p. 715.

Perineal Lacerations.—Henkel regards a timely episiotomy as the best means for prevention of rupture and prolapse. It may be sutured even on the second or third day and heals rapidly because the perineum has not been exposed to prolonged pressure, and because the wound edges are smooth.

Ectoscopy.—Weisz determines the margins of the lungs by inspection. The lower border may be seen in shallow breathing or even during the interval of respiration by the intercostal grooves. A sniffing movement makes them still more evident. No grooves are apparent in the spleen and liver region. With speaking (saying, for example, repeatedly the word kitt), the grooves bulge. This applies even when there is effusion. A point for puncture of an encapsulated empyema may be found by this symptom even if the rest of the pleura is thickened.

Familial Pernicious Anemia.—Tscherning observed pernicious anemia in three sisters.

Deutsche Zeitschrift für Chirurgie, Leipzig

195: 145-215 (April) 1926

*Involution and Disease of the Breast. A. Dietrich.—p. 145.
Nitrous Oxide General Anesthesia. W. C. Meiss.—p. 157.
*Reduction of Suprarenal Tissue in Treatment of Cancer. Stephan.—p. 170.
Experiments in Regeneration of Pituitary. Meuret and Junker.—p. 194.
*Lymph from Thoracic Duct as an Antidiabetic. W. J. Klug.—p. 210.

Involution, Fibromatosis and Cancer of the Mammary Gland.—Dietrich studied the physiologic changes in the mammary gland from infancy to senility, and points out that these changes throw light on the nature of diffuse fibromatosis with cyst formation (cystic breast, chronic cystic mastitis, cyst adenoma). The source of this condition is neither inflammation nor tumor, but a condition of chronic irritation, arising from disturbed metamorphosis. Diffuse fibromatosis is accompanied by active proliferation of connective tissue, involutional processes and proliferation of epithelium, the final stage of which is represented by tumor formation (fibroadenoma and carcinoma). The frequency of carcinoma in cases of diffuse fibromatosis coming to operation is given as 40-50 per cent.

Operative Reduction of the Suprarenal Tissue in the Treatment of Inoperable Carcinomas.—Studies on the physiology of the reticulo-endothelial system, made in Stephan's service, showed the prime importance of this system in combating invasion, whether by infection, toxins or carcinoma. Further experiments showed that the function of this system is subject to an inhibiting influence by the internal secretion of the suprarenal cortex. Stephan conceived the idea that the benefit in carcinoma cases from deep roentgen-ray treatment lay chiefly in enhancing the defensive function of the connective tissue cell and that the refractoriness of certain carcinomas to the roentgen ray depended, not on the nature of the tumor

cell or on the dose, but on defective function, with inability to respond, on the part of these cells. As the reticulo-endothelial system forms a single apparatus, progress must lie in improving the functional condition of the system as a whole. From this standpoint, he removed the left suprarenal capsule from eleven patients in late stages of inoperable carcinoma, which had proved absolutely refractory to the roentgen ray. Subsequent roentgen-ray treatment was followed by a severe reaction, although the doses were much smaller than those of the previous, reactionless treatment. The only pathologic change observed in the organ removed was atrophy, of varying grades, of the cortex, limited to the outermost zone. This was present in all but one case. Stephan holds that this atrophy represents nature's effort to increase the resistance by lessening the output of the hormone which inhibits connective tissue cell function. In the case in which atrophy was absent, the course of the disease was in keeping with the nonresponse of the organ. Stephan also reports good results from partial suprarenalectomy in cases of polycythemia, and temporary results from implantation of suprarenal tissue in cases of pernicious anemia. A measure for the functional power of the reticulo-endothelial system is found in the ferment number of the proteolytic serum ferment. Extirpation of a suprarenal capsule is to be regarded as an auxiliary, not an etiotropic therapy of malignant disease. His entire material, extending over years, will shortly be published.

The Lymph from the Thoracic Duct as an Antidiabetic.—Klug ascertained experimentally that the lymph from the thoracic duct contains a substance which interferes with consumption of sugar in the organism. Its nature is uncertain. He injected this lymph intravenously into three pancreatectomized dogs, and found that the blood sugar index sank; the level to which it sank varied in the different dogs. The result was the same whether autogenous or homogenous lymph was used. With a large initial dose the effect appeared to last through the day; a smaller dose had to be repeated. The action of the lymph seemed to be similar to but not so rapid or so strong as that of insulin. The quantity required is much larger and it is more difficult to obtain.

Jahrbuch für Kinderheilkunde, Berlin

112: 111-236 (April) 1926

Organ Analysis in Dystrophia. Aron and Pogorschelsky.—p. 111.
*Pneumococcus Immunity. F. von Gutfeld and E. Nassau.—p. 135.
Peptidase in Children. A. Mertz and H. Meyer.—p. 149.
*Vitamin C in Human Milk. A. Frank.—p. 169.
The Play of the Pupils in Infants. A. Peiper.—p. 179.
*Nitrogen Metabolism in Fever. O. Beck.—p. 184.
Psychotherapy for Hysterical Children. J. Schlesinger.—p. 218.
"Fatty Acids and the Intestine." Catel and v. Graevenitz.—p. 227.

Pneumococcus Immunity.—Gutfeld and Nassau injected suspensions or autolysates of pneumococci intracutaneously. A positive reaction was induced in about 17.5 per cent of the infants under 3 months of age and in 92 per cent up to the end of the first year. The reaction was always negative in infants with acute bronchopneumonia. The serum from children with a negative reaction neutralized the suspension.

Vitamin C in Human Milk.—Frank observed recovery from scurvy in an infant and prevention of it in others, although the guinea-pigs fed with the same (human) milk died from scurvy.

Nitrogen Metabolism in Fever.—Beck investigated the nitrogen metabolism in six infants with fever due to vaccination, measles or chickenpox. The balance was negative, the elimination of uric acid and especially of ammonia was high, the amino-acids low. Creatinin did not change.

Klinische Wochenschrift, Berlin

5: 681-736 (April 16) 1926

Problems of Metasyphilis. A. Bostroem.—p. 681.
Asthma and Anaphylaxis. K. Eskuchen.—p. 686.
*Insulin-Resistant Diabetes. E. Frank.—p. 688.
*Treatment of Asthma. W. S. van Leeuwen and W. Kremer.—p. 691.
Prevention of Metasyphilis. Hauptmann.—p. 695.
Work Metabolism in Exophthalmic Goiter. F. Kisch.—p. 697.
Protein Requirement in Acromegaly. E. Krauss.—p. 700.
*Syphilitic Disease of Vessels. P. Jungmann and R. Hall.—p. 702.
*Latent Edema. H. Guggenheimer and P. Hirsch.—p. 704.
Metabolism in Gout. K. Harpuder and L. Spitz.—p. 706.
Degkwitz' Measles Serum. K. Mosse.—p. 708.
*Excochleation of Bones. M. ten Doornkaat Koolman.—p. 709.
Colloidal Gold and Proteins. P. Uhlenbruck.—p. 710.
"Paralysis Encephalitis." F. Plaut.—p. 711.
Epituberculous Infiltrations. C. Henius.—p. 712.
Diagnosis of Endocrine Diseases. H. Bernhardt.—p. 713.
Leukocytes and Autonomic System. E. F. Müller.—p. 716.
Artificial Mineral Waters. O. Warburg.—p. 734.
Artificial Karlsbad Salts. F. Umber.—p. 734.

Insulin-Resistant Diabetes.—Frank sees an analogy to insulin resistant diabetes in the comparatively high resistance of glycosuria due to piqûres or epinephrine. It seems further that there may be combinations of nonpancreatic hyperglycemic diabetes with a renal glycosuria.

Treatment of Asthma.—Storm van Leeuwen and Kremer treated eighty asthma patients in special clean and airtight rooms supplied with cleaned air. They noted an almost complete cure of the asthma in 76 per cent, great improvement in 14 per cent, and no effect in 10 per cent. They investigated the probability of food factors by ordering a two day fast. The allergen-free room might be tried in treatment of eczema. They have already had encouraging results in treatment of some tuberculous subjects who are frequently allergic to substances contained in the air.

Syphilitic Diseases of Vessels.—Jungmann and Hall noted in the pathology institute of the Charité at Berlin an almost threefold higher incidence of syphilitic aortitis in the last five years than before.

Latent Edema.—Guggenheimer and Hirsch injected intracutaneously a solution which was isoionic with the blood. It disappeared faster in manifest and latent edema than in normal persons.

Excochleation of Bones.—Koolman believes that excochleation of the marrow of a long bone in dogs is followed after a negative phase by an increase of the erythrocytes above the original level.

5: 737-776 (April 23) 1926

Acid-Base Equilibrium. K. Gollwitzer-Meier.—p. 737.
*Serology of Mother and Fetus. L. Hirszfeld and Zborowski.—p. 741.
*Peroral and Percutaneous Immunization. Reiter and Kurokawa.—p. 744.
*Irradiated Milk. P. György.—p. 747.
Heart and Sport. H. Herxheimer.—p. 749.
Carbon Dioxide Baths. S. Hediger.—p. 751.
Fibers in Sputum. K. Herxheimer and C. M. Hasselmann.—p. 755.
Prevention of Measles. H. A. Gins.—p. 755.
"Blood Platelets." Stahl.—p. 755. Reply. G. Z. von Rokay.—p. 756.
Determination of Blood Sugar. M. Adler.—p. 757.
Complement Fixation. P. Moretti.—p. 758.
Endocrine Diseases. H. Bernhardt.—p. 758. C'cn.
Milk Supply. H. Selter.—p. 763.

Serology of Mother and Fetus.—Hirszfeld and Zborowski find that fetuses of the AB group (IV Jansky) are born from mothers of the O (I Jansky) group and fathers of the AB group less frequently than expected according to the laws of heredity. They believe that perhaps a man of the pure formula AABB might not have any children at all with a woman of the group O.

Peroral and Percutaneous Immunization.—Reiter and Kurokawa found sodium benzoate a valuable addition to peroral or intracutaneous vaccines in animals.

Irradiated Milk.—György succeeded in treatment of rickets with irradiated dried milk.

Medizinische Klinik, Berlin

22: 599-638 (April 16) 1926

Insulin in Diabetes. Umber.—p. 599.
*Monocytes and Trialism. V. Schilling.—p. 605. C'cn.
Professional Diseases of Physicians. J. Löwy.—p. 607. C'cn.
Symposium on Artificial Abortion. Opitz et al.—p. 610.
*Endogenous Iridocyclitis. J. Kubik.—p. 612.
Social Considerations and Sanatoriums. Grünbaum.—p. 615.
Optimism in Medical Art. L. Meyer-Homberg.—p. 618.
"Cactus Spines." G. Hauffe.—p. 619.
Histochemistry of Bismuth and in Differentiation of Tissues. E. Christeller, Komaya and K. Kaiser.—p. 619.
Suicide a Sequel of Trauma. W. Brandis.—p. 621.
Survey on Urology. R. Paschkis.—p. 624.
Iodine in Internal Medicine. A. Slauck. Supplement.—pp. 47-74.

Monocytes and Trialism.—Schilling concludes his survey of the monocytes as the third system of white blood corpuscles.

Endogenous Iridocyclitis.—Kubik was unable to induce iridocyclitis in rabbits by inoculations of material from granulomas from teeth extracted from patients with irido-

cyclitis. He had positive results with caries material from patients with corneal herpes. The substance taken from their teeth caused herpes in six cases.

22: 639-676 (April 23) 1926

Endocarditis Lenta. J. Lossen.—p. 639.
The Marathon Runner. P. Schenk and M. Wissemann.—p. 643.
Artificial Abortion. Henkel et al.—p. 645. C'tn.
Suture in Cryptorchidism. C. Springer.—p. 648.
Roentgen Injury. G. Gabriel.—p. 649.
*Lumbar Puncture. R. Korbsch.—p. 651.
Prevention of Measles. M. Meiszner.—p. 652.
Syphilitic Contracted Stomach. F. Hirschberg.—p. 653.
Papilloma of the Hypopharynx. F. Gumpertz.—p. 655.
*Hemorrhagic Pachymeningitis. A. Sonnenfeld.—p. 656.
Meinicke Turbidity Test. Laubenheimer and von Roques.—p. 657.
Psychosis from Being Censured. W. Brandis.—p. 659.
*Lecithin and Anesthesia. Birkholz.—p. 660.
Goat Milk Anemia. B. de Rudder.—p. 662. C'td.

Lumbar Puncture.—Korbsch recommends local anesthesia for lumbar punctures.

Hemorrhagic Pachymeningitis.—Sonnenfeld observed hemorrhagic cerebrospinal fluid in two cases of sunstroke.

Lecithin and Anesthesia.—Birkholz has continued his research in this line. He concludes that intravenous injections of large amounts of lecithin (up to 95 cc. of a 10 per cent emulsion) had no influence on the length nor on the after-effects of chloroform anesthesia.

Münchener medizinische Wochenschrift, Munich

73: 681-722 (April 23) 1926

Haff Disease. H. Selter.—p. 681.
Common Colds. H. Much.—p. 684.
Pyelitis. W. Lehmann.—p. 686.
Technic for Third Meinicke Reaction. E. Meinicke.—p. 691.
Cholangeitis ex Ingestis. R. Jaksch-Wartenhorst.—p. 693.
Oil of Chenopodium. W. Scharpff and Schneller.—p. 693.
"Occupational Hygiene." L. Teleky.—p. 695.
Epidemic Encephalitis in China. M. Pfister.—p. 697. C'en.
*Fatal Blunders in Otorhinolaryngology. J. Zange.—p. 699.
Physician and Agrarian Reform. H. Krausz.—p. 702. C'en.

Fatal Blunders in Otorhinolaryngology.—Zange warns against treating a supposed laryngitis for more than six weeks without consulting a specialist. A carcinoma might be overlooked. Syphilis is a frequent source of diagnostic blunders. It may resemble peritonsillitis and be neglected or maltreated surgically. It never causes trismus, while even a slight peritonsillitis is associated with difficulty in opening the mouth. Meningitic symptoms should always draw attention to the ear; so should slight rises in temperature in persons who have had inflammation of the middle ear at any time.

Wiener Archiv für innere Medizin, Vienna

12: 385-602 (April 15) 1926

Roentgenology of Right Arch of the Aorta. A. Arkin.—p. 385.
*Urobilinogenuria. W. Schiller.—p. 417.
Needle Electrodes. H. Kupf.—p. 429.
*Protein Injections and the Neutrophils. A. Hirsch.—p. 453.
Serum Ferments and Pregnancy. Herrmann and Kornfeld.—p. 469.
*Cerebral Dyspnea. L. Hess and E. Pollak.—p. 477.
Reciprocating Beat. D. Scherf and C. Shookhoff.—p. 501.
Chlorine Metabolism and the Stomach. G. Holler.—p. 515.
Theory of Auscultation. A. Winkler.—p. 569.
Polycythemia, Anemia and the Heart. L. J. Del Baere.—p. 593.
"Acute Leukemia." Beitzke.—p. 597. Idem. Sternberg.—p. 599.
"Pregnancy and Leukemia." G. Joachim.—p. 603.

Urobilinogenuria.—Schiller found no urobilinogen in the hematomas of women with ruptured extra-uterine pregnancy, although they eliminated the chromogen by the urine. Bilirubin was present in the extravasates. Intravenous injection of sugar (0.25 Gm. per kilogram of body weight in 25 per cent solution) was followed by a decrease in urobilinogenuria in the first months of pregnancy, by an increase in the later months.

Protein Injections and the Neutrophils.—Hirsch finds a parallelism between the changes of leukocytes, especially the shifting to the left, after parenteral injections of proteins and in infectious diseases.

Cerebral Dyspnea.—Hess and Pollak examined the brain in dyspnea not associated with cyanosis. In such cases of various origin (diabetic coma, grave insufficiency of the liver from atrophy or cancer, pernicious anemia, atherosclerosis and encephalitis) the pigmented cells in the locus coeruleus were swollen and degenerated. They conclude that the locus coeruleus is the center for nervous regulation of breathing in man.

Wiener klinische Wochenschrift, Vienna

39: 465-492 (April 22) 1926

*Skin and Pleura. J. Sorgo.—p. 465.
*Precipitinogen and Toxin. M. Eisler and N. Kovács.—p. 469.
Conduction from Sinus. C. J. Rothberger and D. Scherf.—p. 470.
Roentgen Ulcer. O. Reimer.—p. 471.
Roentgen Paper. G. Eichelter.—p. 473.
Coronary Circulation. R. Kaufmann.—p. 477. C'en.
Contusion Injuries of Abdomen. R. Demel.—p. 480.
Crooked Back and Posture. J. Hass.—p. 481.
Theory of Diabetes. L. Pollak. Supplement.—pp. 1-16.

Skin and Pleura.—Sorgo observed an increased succulence as well as adherence of the skin of the chest when the pleura was affected by chronic processes. This is due to a stagnation of lymph, which drains normally the subcutis and muscles along the costal pleura. The absence of these symptoms indicates a free pleural cavity. An artificial pneumothorax is possible in such cases. He also uses the symptom in diagnosis between apical pleurisy and apicitis.

Precipitinogen and Toxin.—Eisler and Kovács conclude that the precipitate produced by an antiserum in filtered cultures of a hemotoxic cholera strain only adsorbs the toxin. They were unable to precipitate the toxin by its antitoxin.

Zeitschrift für Tuberkulose, Leipzig

44: 433-498 (April) 1926

Tuberculosis in School Children. F. Ickert.—p. 433.
*Tuberculin Sensitization. J. Caspari.—p. 447.
Outcome of Sanatorium Treatment in Open Tuberculosis. E. Warlimont. —p. 454.
Open Tuberculosis. A. Winkler.—p. 458.
Gunshot Wounds of the Lungs. G. Schellenberg.—p. 469.

Tuberculin Sensitization.—After various failures, Caspari succeeded in sensitizing guinea-pigs against tuberculin by injecting fresh extracts from organs of tuberculous guinea-pigs which had been injected with tuberculin two hours before being killed.

Zentralblatt für innere Medizin, Leipzig

47: 377-392 (April 17) 1926

*Leukemic Blood. R. Jaksch-Wartenhorst.—p. 377.

Leukemic Blood.—Jaksch-Wartenhorst's patient had all the symptoms of acute pernicious anemia. She developed an additional hematologic syndrome of myelogenous leukemia three days before her death. Necropsy confirmed the former diagnosis. Carcinoma may also cause a transitory blood crisis resembling leukemia.

Russkaia Klinika, Moscow

5: 343-496 (March) 1926

Histology of Generalized Fibrous Osteitis. A. Abrikosoff.—p. 343.
Intubation of the Stomach. E. Batinkoff.—p. 375.
The Duodenal Reflux into the Stomach. V. Ivanoff.—p. 381.
*Hemorrhagic Diathesis with Liver Disease. V. Smotroff.—p. 409.
*The Endocrine Glands in Syphilis. E. Vasilieva.—p. 416.
*Brain Emulsion for Treatment of Epilepsy. V. Militzyn.—p. 426.
Postoperative Complications with Inflammation of Biliary Apparatus. I. Rufanoff.—p. 438.

Pathogenesis of Hemorrhagic Diathesis with Liver Disease.—Smotroff never found retarded blood coagulation or other signs of a hemorrhagic constitution in grave mechanical jaundice, unless there were diffuse lesions of the liver parenchyma. A deficient formation of thrombin is responsible for the faulty blood coagulation with diffuse lesions of the liver. The products of liver autolysis seem to inhibit the coagulation process. Lesions of the liver parenchyma are a secondary factor in the hemorrhagic diathesis, since experimentally it can be induced only by a combined injury to the liver and other tissues. In infectious jaundice, symptoms of a hemorrhagic diathesis as in hemorrhagic purpura may coexist with a normal number of blood platelets. Examination for signs of a hemorrhagic diathesis should be made in all patients with jaundice and liver disease, before operation.

The Endocrine Glands and Involuntary Nervous System in Syphilis.—Vasilieva noted enlargement of the thyroid gland in three of forty-two syphilitics, whether the syphilis was latent or in the secondary or tertiary phase. Atropine tests revealed a reduced sympathetic tonus, with vagotonia, in thirty. This testified to disturbances of the endocrine glands from the syphilitic infection. The phenomena disappeared after a prolonged specific treatment.

Brain Emulsion in Treatment of Epilepsy.—Militzyn applied brain emulsion in treatment of sixty-nine patients with grave epilepsy, rebellious to the usual measures. A daily dose of 1 cc. was given subcutaneously for thirty days, the series repeated at intervals of a month. No less than three series of injections were given. An improvement of sleep, appetite and mental condition was manifest in all. The number of seizures and their intensity became reduced in 92.7 per cent. The seizures appeared rarer in 38.8 per cent. The action on the mental faculties was particularly evident in one epileptic infant, aged 9 months. This treatment may prove effectual in prevention of dementia in epileptic children. The injections seem to be harmless; no by-effects occurred even after nine series.

Nederlandsch Maandschrift v. Geneeskunde, Leiden

13: 361-406, 1926

*Tetany and Alkalosis. J. G. F. de Geus.—p. 361.
*Skin Reactions in Scarlet Fever. Gorter and de Korte.—p. 383.
*Vaccination and Measles. J. Munk.—p. 399.
*Blood Transfusion in Infants. J. Slooff.—p. 402.

Tetany and Alkalosis.—De Geus' research on twenty dogs confirmed that tetany invariably develops when the calcium content of the serum falls below 8 mg. per hundred cubic centimeters. With a calcium content above this, tetany does not develop unless there is an excess of sodium present. Alkalosis alone does not induce tetany, and the phosphate ion does not seem to have any influence on its development.

Skin Reactions in Scarlet Fever.—Gorter and de Korte explain the differences in the behavior of diphtheria and scarlet fever toxins, and urge that conclusions from one cannot be applied to the other. In the filtrate of streptococcus cultures there is evidently something which has to do with scarlet fever, but this "something" is not a toxin. The filtrate of the culture, however, contains the virus of scarlet fever, and this multiplies in the culture. The blanching and neutralizing action of certain normal serums suggests that one antigen forms antibodies for the other, and vice versa. The invisible diplococci cultivated by Caronia on culture mediums free from streptococci, may be associated with the streptococci in the cultures of the latter. Skin reactions and active immunization have been realized with the Caronia microorganisms.

Measles During Vaccination.—Munk reports that a healthy child contracted measles the fourth day as her vaccination pustule was healing normally. The vaccinia flared up, and ulcers formed on the arm and trunk, with gangrenous centers. A vaccinia pustule developed on the other arm which ran a fourteen day course, as if there had been no immunization. The intercurrent measles seemed to have robbed the organism of all its defensive forces. In another child the eruption from intercurrent measles was most intense in the region of the pustule from the vaccination four days before the exposure to measles, but the ordinary course of the pustule was not modified. In two sisters given toxin-antitoxin preventive treatment against diphtheria, the eruption of an intercurrent chickenpox appeared first and was most pronounced in the region of the toxin-antitoxin injection.

Blood Transfusion in Treatment of Nutritional Disturbances in Infants.—Slooff's experience encourages blood transfusion as a routine measure in malnourished infants, especially when the child has to be restricted to water. In five instances described, the atrophy was of different origins, but the benefit from the transfusion was remarkable in the cases in which the vital energies were not at too low an ebb. In Gorter's experiments on rats, he was able to prevent or cure the atrophy from exclusive starch feeding by giving cod liver oil or yeast. In the infants whose cases are related there was no lack of vitamins; they seemed unable to absorb them from the intestinal tract, damaged by bacterial products or toxins. They were able to utilize those in the transfused blood, however, reaching the blood without having to pass through the intestinal walls. The transfusion may also bring antibodies for bacteria or toxins. Gorter succeeded in warding off keratomalacia and paresis in animals by injection of plasma alone.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 933-1036 (March 6) 1926

*Hay-Fever. C. E. Benjamins et al.—p. 935.
*Pituitary Extract in Obstetrics. M. L. Muller.—p. 945.
Slight Modification of Naegele Forceps. Wesselink.—p. 957.
The Blood in Chronic Rheumatism. J. Van Breemen.—p. 958.
*Ether for Anesthesia. N. Schoorl.—p. 964.
*Retinal Hemorrhage with Blood Transfusion. G. A. Schaly.—p. 965.
*Fames Canina. J. Schrijver.—p. 969.
Household Remedies for Hiccup. C. Bakker.—p. 975.
Carolus Clusius, 1526-1609. B. W. T. Nuijens.—p. 979.

Hay-Fever.—Benjamins, Idzerda and Uittien made extracts of forty different kinds of plants in the Utrecht district that could be incriminated for hay-fever but tests reduced the number to six, and a polyvalent preparation made from this group has proved very successful and convenient. They warn that hay-fever is often assumed when merely spastic rhinitis is involved. There was an urticaria and pruritus or edema general reaction in two cases. The patient should be kept under supervision for half an hour after each subcutaneous injection, with epinephrine ready in case of by-effects.

Pituitary Extract in Obstetrics.—Muller remarks that much harm has been done with pituitary extract in childbirth, but analysis of such cases shows that the indications for and against it were not properly heeded.

Ether Anesthesia.—Schoorl insists that a bottle of ether once opened and standing around for a week, possibly exposed to the action of light, is not fit to use for general anesthesia.

Hemorrhage in the Retina After Transfusion of Blood.—Schaly encountered in 1925 three cases of impairment of vision soon after blood transfusion, which had been done on account of pernicious or aplastic anemia. In one case the eyes had been examined just before the transfusion, and there was no trace of hemorrhage. In one case the eyes were examined post mortem, confirming the extent and the irreparable nature of the disturbances. Vision is not impaired until the extravasated blood spreads toward the macula.

Fames Canina.—Schrijver reproduces the title page of three theses presented for the medical degree about 1660. The clinical picture described as fames canina was evidently an ulcer in the pylorus region, with dilatation of the stomach from stenosis, before the days of the stomach pump.

Mededeel. v. d. Dienst d. Volksgezondheid, Batavia

99-161, 1926. English Edition

*Reports from the State Vaccine Institute for the Netherlands East Indies. L. Otten.—p. 99.
*Rabies Department. J. van den Hoven van Genderen.—p. 115.
Bacteriologic Department. L. Kirschner.—p. 131.
Serum Department. P. Papamarku.—p. 145.

Vaccine Production in the Dutch East Indies.—Three kinds of animals are used in the preparation of vaccine against smallpox, rabbit, calf and buffalo, with retrovaccination from calf to rabbit and from buffalo and vaccinated subject. For preservation of the virulence of the virus in the tropics, the vaccine virus has to make thus a kind of circular movement. This technic has proved efficient, and the vaccine institute at Weltevreden despatched lymph in 1925 for more than twelve million inoculations. It aims to vaccinate the entire population of the islands, and revaccinate every ten years. Means to realize this more effectually are discussed.

Treatment of Rabies.—The Antirabies Institute uses the Högyes method, and this report states that fixed virus emulsified in glycerin diluted 25 per cent with normal saline solution retains its original virulence for more than a year when kept at from minus 10 to minus 15 C. Exceptionally fine and completely sterile emulsions are obtained by Nijland's method of

shaking up the brain tissue, transferred directly from the skull to a small wide-mouthed bottle of thick glass, a quarter filled with glass beads. After adding some normal saline solution, the bottle is plugged and shaken by hand or with a small electric shaking apparatus.

Hospitalstidende, Copenhagen

69: 197-216 (March 4) 1926

*The Static Leukocyte Reactions. E. Jacobsen.—p. 197.

Leukocyte Reactions.—Jacobsen has confirmed Jørgensen's statements that the number of leukocytes in the peripheral blood capillaries changes on a change from the reclining to the erect posture. Jacobsen did not find the differences so great as the latter found, but they were unmistakable, sometimes over 20 per cent in blood from the finger as well as from the ear. To eliminate error from muscular strain, he fastened the subject to a table and tilted the table as desired. The data seem to testify that the changes are due to the heart and are not of peripheral origin. In two subjects with actual heart disease the blood in the ear and the finger blood did not parallel each other as in the twenty-two other subjects. The data all testify in favor of a central (cardiac) origin for the static leukocyte reaction.

69: 217-240 (March 11) 1926

*Formation of Gallstones in the Liver. S. Hansen.—p. 217.
Experiences with Transfusion of Blood. O. Kapel.—p. 228. C'td.
*Diagnostic Eversion of Rectal Mucosa. O. Jersild.—p. 234.

Gallstones in the Liver.—Hansen states that gallstones were found in 24.7 per cent of 392 adult cadavers examined in 1925 and two or more gallstones were found in the liver itself in seven, the ages from 68 to over 80. In six of the cases the bile ducts were more or less obstructed but in one man of 80 small, pure pigment calculi were found in the liver and also in the gallbladder and cystic duct. The bile was sterile, and nothing was found in the anamnesis or at necropsy to suggest stasis of bile at any time. In some of the others there was cholesterol with the pigment in the intrahepatic calculi. Some of the intrahepatic calculi were faceted, which disproves the theory attributing faceting to the pressure of the gallbladder. In conclusion he refers to J. Hoffmann's Geneva 1912 thesis on Intrahepatic Calculosis and E. Beer's study published in 1904 in the *Archiv für klinische Chirurgie* as the only literature available on the subject.

Diagnosis of Gonoccal Disease of the Rectum.—Jersild states that it is possible, with one or two fingers in the vagina, to evert the mucosa of the rectum in 60 or 70 per cent of adult women. This allows direct visual inspection of gonococcal proctitis which often escapes examination otherwise, owing to the folds and crevices. This eversion method smooths out the folds and brings enough of the mucosa into view to confirm the diagnosis, and possibly reveal an unsuspected fissure.

Ugeskrift for Læger, Copenhagen

88: 311-336 (April 1) 1926

Race and Sex Differentiating. Plumage in Fowl Bastards. Pézard et al. —p. 311.
Cholecystography. E. Møller and D. Ottosen.—p. 313.
*Convergent Spasm and Labyrinth Disease. G. V. T. Borries.—p. 322.
Direct Roentgenography of Gallstones. S. Hansen.—p. 328.

Convergent Spasm in Labyrinth Disease.—Borries reports experiences which show that either hysteria or a labyrinth fistula or both together may induce the convergent spasm in tests of vestibule function.

88: 337-362 (April 8) 1926

*Function of the Static Labyrinth. S. H. Mygind.—p. 337.
*Exophthalmic Goiter. C. Gram.—p. 345.
Double Ampule for Arsphenamine. Philipsen.—p. 349.
*Measles Convalescent Serum in General Practice. T. Kemp.—p. 351.
The Mode of Life and the Mortality. M. Hindhede.—p. 356.

The Functioning of the Labyrinth.—Mygind's profusely illustrated article presents arguments to sustain the contention that the static labyrinth is a part of the skin, with its corresponding nerve. The stimulus for it is a contact sensation, and its function is a contact-seeking reflex. The direction of the reflex is determined by the location of the irritated point in respect to the three dimensions of the space. He shows how this assumption explains the phenomena of past pointing and other vestibular reflexes.

Exophthalmic Goiter.—Gram gives some illustrations of an antique bust and modern cases of exophthalmic goiter, calling attention to the likeness between them. There do not seem to be any references in ancient literature to this disease, but some of the Roman sculpture suggests it. He thinks that treatment of exophthalmic goiter should be preeminently addressed to the mind. For this reason he urges a stay in a sanatorium or, better still, in a hospital. The change of scene in itself brings a rest from the daily discomforts or worries that have been instrumental in bringing on the disease, and the patient experiences great relief in talking things over with a bright, solicitous nurse. The general care in the hospital reduces or cures dyspeptic and other symptoms which have worried the patient. In addition to psychotherapy, he gives iodine and iron pills, outdoor rest cures, and if there is much agitation, sodium bromide, valerian, camphor or digitalis as indicated. The extremely toxic cases belong to the surgeon and iodine is strictly contraindicated. Roentgen exposures are also useful in checking thyroid function, but there is danger of accomplishing too much with it, entailing myxedema from thyroid insufficiency. Exophthalmic goiter has been known exceptionally in girls, and even in boys, before puberty.

Measles Convalescent Serum in Prophylaxis.—The three children, all under 5, slept in the same room with the father who had contracted measles. The children were all in the midst of whooping cough, and the sixth day of the father's measles they were injected intramuscularly with 10 or 15 cc. of convalescents' serum. None developed measles. The father, Kemp adds, donated serum when he was convalescent, to aid others in prophylaxis, and Kemp urges practitioners to aid in finding older children and adults willing to yield serum for the purpose.

88: 409-432 (April 29) 1926

*Innervation of the Stomach. E. Thomsen.—p. 409.
Dysregulation in Degenerates. V. Askgaard.—p. 411.
*Local Treatment of Varicose Veins. K. Alstrup.—p. 412.
Preparation of Dry Silver Nitrate-Treated Gauze. Tvedegaard.—p. 413.
Insurance Against Disability and the Campaign Against Tuberculosis. J. Frandsen and O. Bruun-Rasmussen.—p. 421.

Innervation of the Stomach.—Thomsen recalls that the innervation of the stomach consists of motor, inhibiting and secretory fibers in the vagus and sympathetic, besides the autonomic, intermuscular, Auerbach, and the submucous, sympathetic, Meisner nerve cells in the stomach walls. The left vagus dominates the secretion in the stomach; this was demonstrated anew by his cure of a man with gastric crises and periodic attacks of continuous hypersecretion so debilitating that operative relief was imperative. The man was restored to clinical health by resection of the vagus ramifications on the anterior aspect of the abdominal portion of the esophagus. The innervation of any organ cannot be regarded as an isolated phenomenon but only as an integral part of a great closely interlinked system. The local manifestation in the stomach is a result of nervous coordination. The effect of this coordinating work is most readily manifested in the secretory domain; the motor function responds more sluggishly.

Local Injection Treatment of Varicose Veins.—Alstrup has the patient stand on a footrest nailed to a long board standing upright. This allows injection in the erect position. An assistant then tilts the board over a saw-horse until the patient's head is lower than the feet. This seesaw apparatus leaves the operator's hands free all the time; the patient is still and tranquil, and the injection of the sodium chloride solution proceeds smoothly.

Correction

Neutral Red Serologic Test for Cancer.—Roffo's original technic for this test was with 2 cc. of serum to which were added 5 drops of a 0.03 per cent solution of neutral red. His latest publication gives the technic as 2 cc. of serum with addition of 5 drops of a 0.1 per cent solution of neutral red. This corrects the abstract on page 1877. His original communication was summarized, Feb. 13, 1926, p. 519.